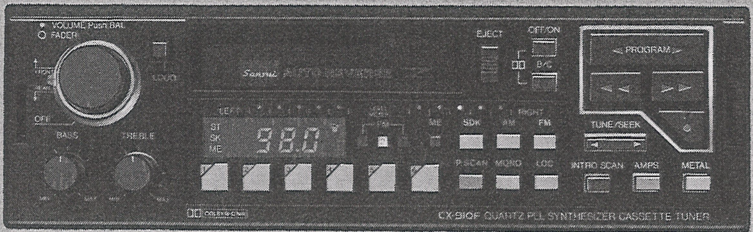
SERVICE MANUAL

QUARTZ PLL SYNTHESIZER
CASSETTE TUNER

SANSUI CX-910F


VOLUME Push BAL
FADER
LOUD
OFF
BASS
TREBLE
Sansui AUTO REVERSE
EJECT
OFF/ON
B/C
PROGRAM
LEFT
RIGHT
ST
SK
ME
98.0
FM
ME
SDK
AM
FM
TUNE/SEEK
P.SCAN
MONO
LOC
INTRO SCAN
AMPS
METAL
DOLBY B-C NR
CX-910F QUARTZ PLL SYNTHESIZER CASSETTE TUNER

Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

Audio section

Input sensitivity and impedance (1 kHz)	
LINE IN	150 mV/10 kohms
Output voltage	
LINE-OUT	150 mV
PRE-OUT (LOW)	150mV
PRE-OUT (HIGH)	500mV
Signal to noise ratio (A network)	
	75 dB
Frequency response	30 Hz to 40,000 Hz ±3 dB
Controls	
BASS	±10 dB at 100 Hz
TREBLE	±10 dB at 10 kHz
LOUDNESS	+8 dB at 100 Hz +6 dB at 10 kHz (VOLUME: −30 dB)

FM section

Tuning range	88 to 108.0 MHz
Usable sensitivity	
Mono IHF	14.8 dBf (1.5μV/75 ohms)
50 dB quieting sensitivity	
Stereo	18.4 dBf
Signal to noise ratio	70 dB
Stereo separation	35 dB at 1 kHz

AM section

Tuning range	530 to 1,600 kHz
Usable sensitivity	30 μV/75 ohms at 1,000 kHz
Signal to noise ratio	45 dB
Image response ratio	50 dB at 1,000 kHz

Tape section

Track format	4-track/2-channel system
Tape speed	4,8 cm/sec.
Tape transport system	Auto reverse playback
Wow/flutter	0.08% max. (WRMS)
Frequency response	
Normal (LH) tape	30 to 14,000 Hz ±3 dB
Metal tape	30 to 16,000 Hz ±3 dB
Signal to noise ratio	
Metal Tape (without Dolby Noise Reduction)	
	better than 53 dB
(With Dolby Noise Reduction Effect)	
DOLBY "B" NR	better than 10 dB (above 5 kHz)
DOLBY "C" NR	better than 20 dB (above 1 kHz)
Power requirements	DC 12.0V (Usable: 10,8 ~ 15.6V) Rated: 14.4V negative ground
Current consumption	0.7A Maximum
Dimensions (chassis size)	
	179 mm (7-1/16") W 50 mm (2") H 150 mm (5-15/16") D
Weight	1.57 kg (3.46 lbs) net

- * Design and specifications subject to changes without notice for improvements.
- * Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
  "Dolby" and the double D symbol are trade marks of Dolby Laboratories Licensing Corporation.

CAUTION

1. Some printed circuit boards are not supplied as the assembled.
   To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.

2. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

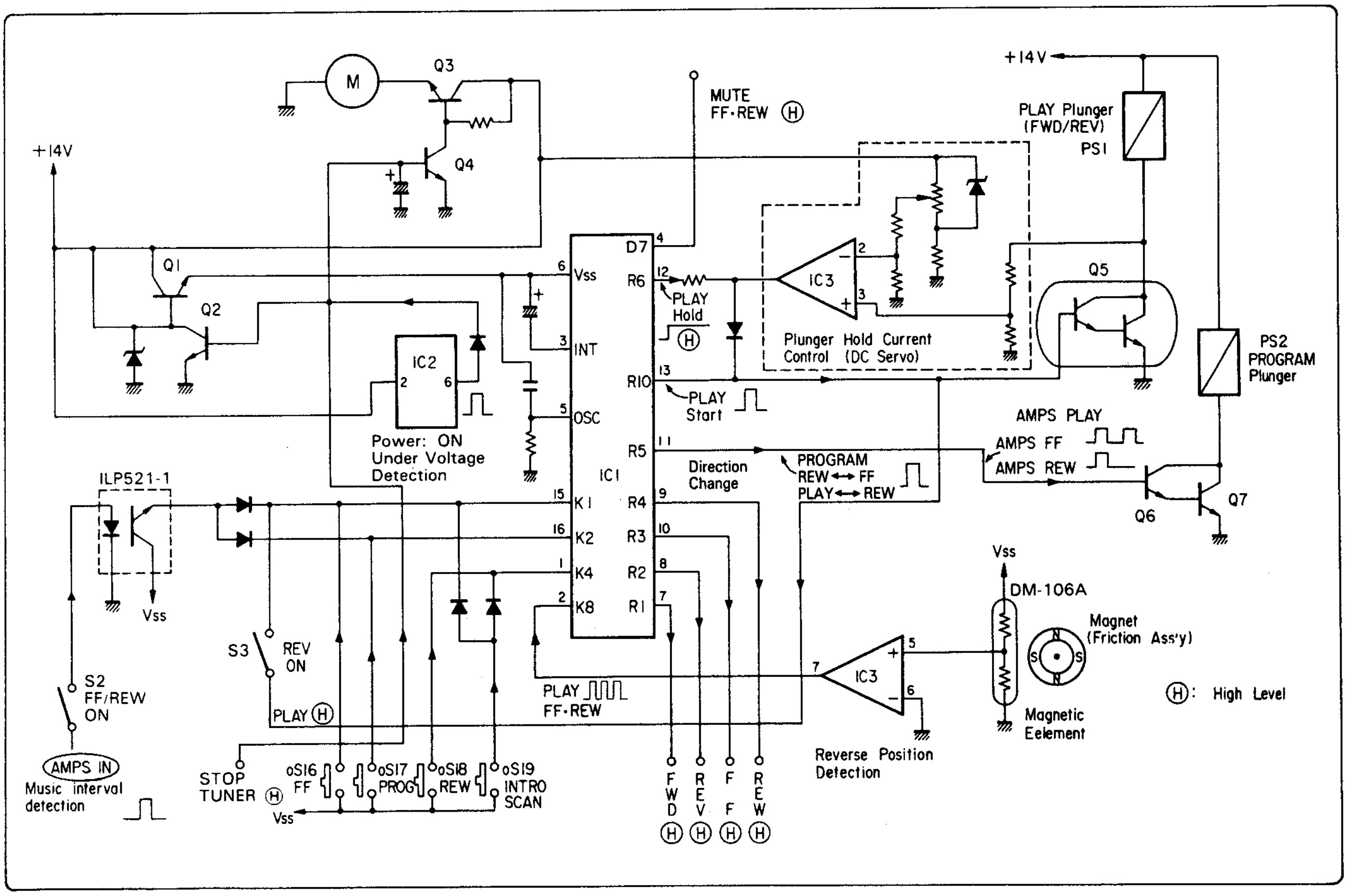
3. Abbreviations in this service manual are as shows right table.

•Abbreviations List

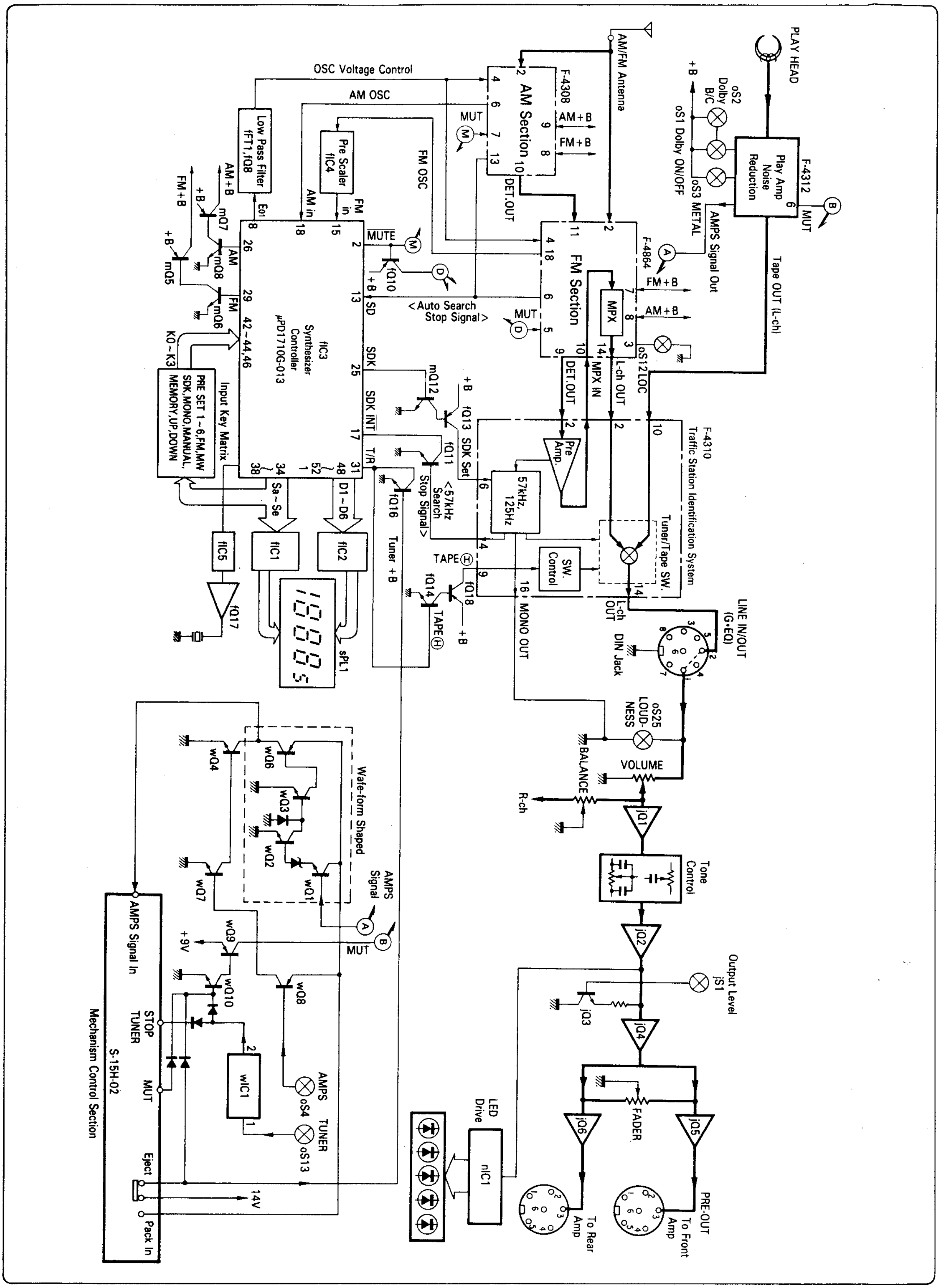
C.R.	: Carbon Resistor
S.R.	: Solid Resistor
Ce.R.	: Cement Resistor
M.R.	: Metal Film Resistor
F.R.	: Fusing Resistor
N.I.R.	: Non-Inflammable Resistor
A.R.	: Array Resistor
C.C.	: Ceramic Capacitor
C.T.	: Ceramic Capacitor, Temoerature Compensation
E.C.	: Electrolytic Capacitor
E.L.	: Low Leak Electrolytic Capacitor
E.B.	: Bi-Polar Electrolytic Capacitor
E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
Ta.C.	: Tantalum Capacitor
F.C.	: Film Capacitor
M.P.	: Metalized Paper Capacitor
P.C.	: Polystyrene Capacitor
G.C.	: Gimmic Capacitor
A.C.	: Array Capacitor
V.R.	: Variable Resistor
S.V.R.	: Semi Variable Resistor
SW.	: Switch
Chip R.	: Chip Resistor
Chip C.	: Chip Capacitor

1. BLOCK DIAGRAM

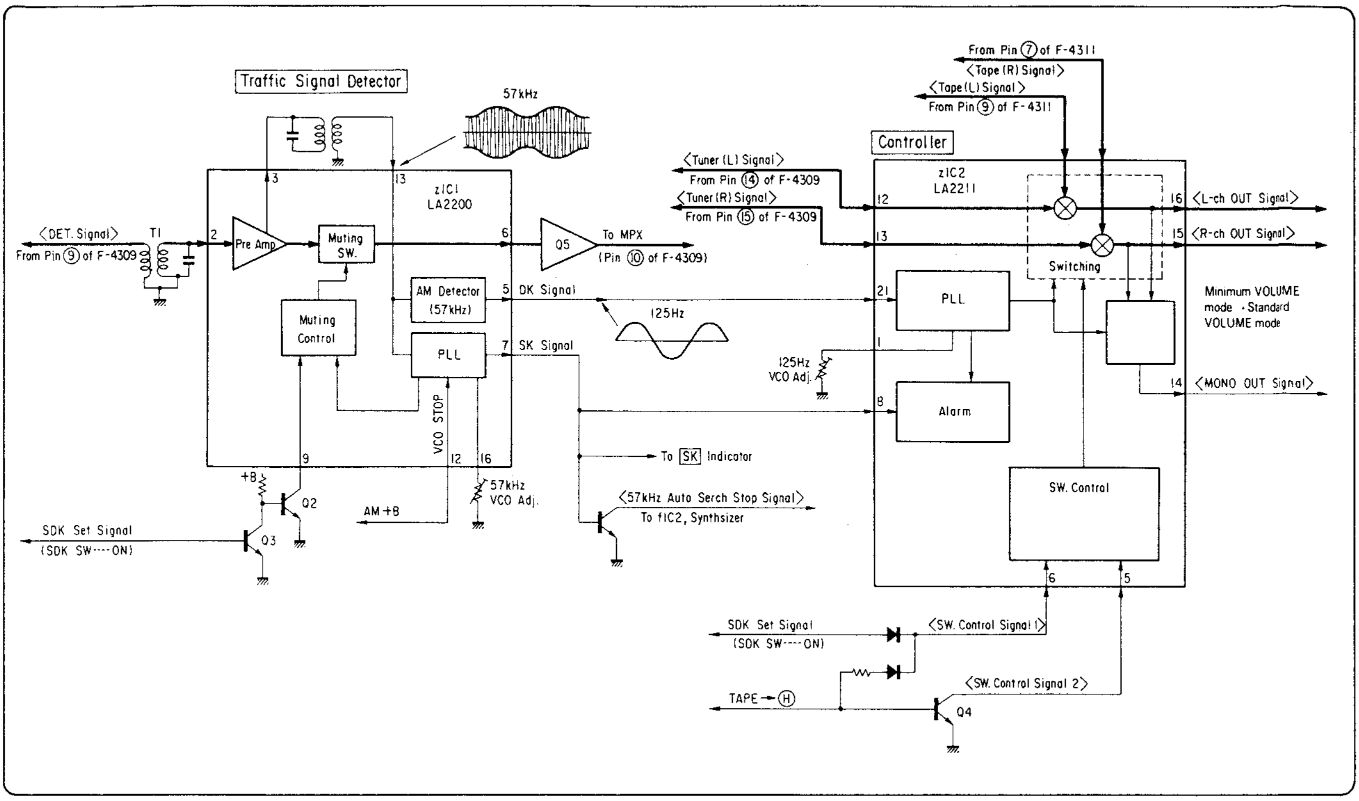
1-1. Mechanism Control Circuit


M
Q3
Q4
+14V
Q1
Q2
IC2
Power: ON
Under Voltage
Detection
ILP521-1
Vss
S3
REV
ON
S2
FF/REW
ON
AMPS IN
Music interval
detection
STOP
TUNER Ⓗ
oS16
FF
oS17
PROG
oS18
REW
oS19
INTRO
SCAN
Vss
PLAY Ⓗ
PLAY
FF·REW
IC1
D7
Vss
R6
INT
R10
OSC
R5
K1
R4
K2
R3
K4
R2
K8
R1
MUTE
FF·REW Ⓗ
PLAY
Hold
Ⓗ
PLAY
Start
Direction
Change
PROGRAM
REW↔FF
PLAY↔REW
IC3
Plunger Hold Current
Control (DC Servo)
+14V
PLAY Plunger
(FWD/REV)
PS1
Q5
PS2
PROGRAM
Plunger
AMPS PLAY
AMPS FF
AMPS REW
Q6
Q7
Vss
DM-106A
Magnet
(Friction Ass'y)
Magnetic
Eelement
IC3
Reverse Position
Detection
FWD Ⓗ
REV Ⓗ
FF Ⓗ
REW Ⓗ
Ⓗ: High Level

1-2. FM AM & Control Section


PLAY HEAD
oS2 Dolby B/C
+B
oS1 Dolby ON/OFF
oS3 METAL
F-4312 Play Amp Noise Reduction
MUT
AMPS Signal Out
Tape OUT (L-ch)
AM/FM Antenna
F-4308 AM Section
AM+B
FM+B
DET.OUT
MUT
OSC Voltage Control
AM OSC
FM OSC
Low Pass Filter fFT1, fQ8
Pre Scaler fIC4
FM in
AM in
Eo1
MUTE
fQ10
+B
SD
SDK
SDK INT
T/R
fIC3 Synthesizer Controller µPD1710G-013
AM+B
FM+B
+B
mQ7
mQ8
mQ5
mQ6
AM
FM
42~44,46
K0~K3
Input Key Matrix
PRE SET 1~6, FM, MW
SDK, MONO, MANUAL,
MEMORY, UP, DOWN
<Auto Search Stop Signal>
F-4864 FM Section
MPX
FM+B
AM+B
MUT
oS12 LOC
DET.OUT
MPX IN
L-ch OUT
mQ12
+B
fQ13
SDK Set
fQ11
<57kHz Search Stop Signal>
fQ16
Tuner +B
F-4310 Traffic Station Identification System
Pre Amp.
57kHz, 125Hz
SW. Control
Tuner/Tape SW.
TAPE Ⓗ
fQ14
fQ18
+B
MONO OUT
L-ch OUT
Sa~Se
D1~D6
fIC5
fIC1
fIC2
fQ17
sPL1
LINE IN/OUT (G+EQ)
DIN Jack
oS25 LOUD-NESS
BALANCE
VOLUME
R-ch
jQ1
Tone Control
jQ2
Output Level jS1
jQ3
jQ4
FADER
jQ6
jQ5
PRE-OUT
To Front Amp
To Rear Amp
LED Drive
nIC1
Wafe-form Shaped
wQ4
wQ6
wQ3
wQ2
wQ1
wQ7
AMPS Signal
MUT
wQ9
+9V
wQ10
wQ8
wIC1
AMPS oS4
TUNER oS13
14V
AMPS Signal In
STOP
TUNER
MUT
Eject
Pack In
S-15H-02
Mechanism Control Section

•Traffic Station Identification System Block Diagram


Traffic Signal Detector
57kHz
3
13
zIC1
LA2200
<DET. Signal>
From Pin ⑨ of F-4309
T1
2
Pre Amp
Muting SW.
Muting Control
AM Detector (57kHz)
PLL
VCO STOP
6
5
7
9
12
16
Q5
To MPX
(Pin ⑩ of F-4309)
DK Signal
125Hz
SK Signal
To SK Indicator
+B
Q2
Q3
AM +B
57kHz VCO Adj.
SDK Set Signal
(SDK SW----ON)
<57kHz Auto Serch Stop Signal>
To fIC2, Synthsizer
From Pin ⑦ of F-4311
<Tape (R) Signal>
<Tape (L) Signal>
From Pin ⑨ of F-4311
Controller
<Tuner (L) Signal>
From Pin ⑭ of F-4309
<Tuner (R) Signal>
From Pin ⑮ of F-4309
zIC2
LA2211
12
13
21
1
8
PLL
125Hz VCO Adj.
Alarm
Switching
16
<L-ch OUT Signal>
15
<R-ch OUT Signal>
Minimum VOLUME mode → Standard VOLUME mode
14
<MONO OUT Signal>
SW. Control
6
5
SDK Set Signal
(SDK SW----ON)
<SW. Control Signal 1>
TAPE → Ⓗ
<SW. Control Signal 2>
Q4

Traffic information reception

In U.S.A., West Germany, Luxembourg, Austria and Switzerland, particular FM stations broadcast useful traffic information at regular intervals for drivers in the respective areas. The name and frequencies of the station broadcasting traffic information in various areas are available from the billboards beside the roads in those areas. Also, these stations always transmit discriminating (SK) signals to identify themselves as traffic information broadcasting stations. Monitoring these SK signals, the unit can select and pick up only those stations. Perform the operation as follows.

1. Depress the FM band switch and the SDK switch. (The FM and SDK indicators light)
2. Set the MANU switch to auto or manual mode and depress the TUNE/SEEK switch to tune in the frequencies of your desired station. The SK indicator lights when a station is tuned in.
3. When it is not the time for the station that has been tuned in to broadcast traffic information, it is possible to set the VOLUME control to the lowest position or change to the tape playback mode and wait for the next traffic broadcast. In this case, when the unit receives the traffic broadcast distinguishing (DK) signals, transmitted just before the traffic information is broadcast, the minimum VOLUME mode or tape playback mode is automatically changed to traffic information reception at a standard volume.
4. The unit turns back to the original mode when the broadcast of the traffic information is over.

* When the distance between you and the station presently playing becomes great, or you enter a different area, the SK indicator goes out due to the weak signals and the alarm sounds. When this happens, tune in a station with strong signals in the new location.

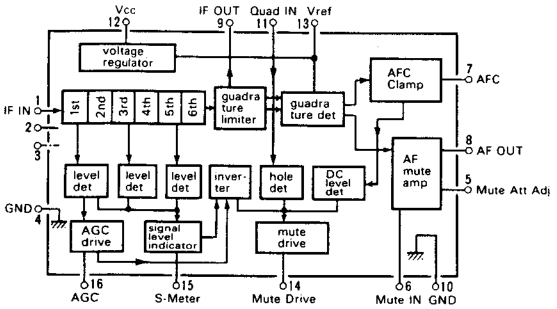
* When tuning is performed by depressing the LOC switch, only the nearest station with strong signals is received.

SDK Switch: When this switch is depressed, the SDK indicator lights up and you can select and listen to only those FM stations broadcasting traffic information.
when the SDK switch is depressed and turning is performed using the TUNE/SEEK switch, stations broadcasting traffic information can be picked up as a result of the discrimination (SK) signals transmitted by only those stations. The SK indicator lights at this time.

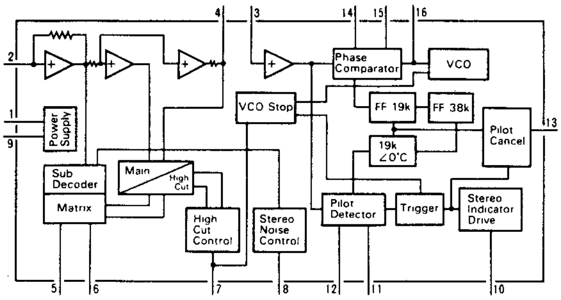
SK indicator: When the FM band switch and SDK switch are depressed and a station broadcasting traffic information is tuned in, the indicator lights.

2. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC μPD1710G-013

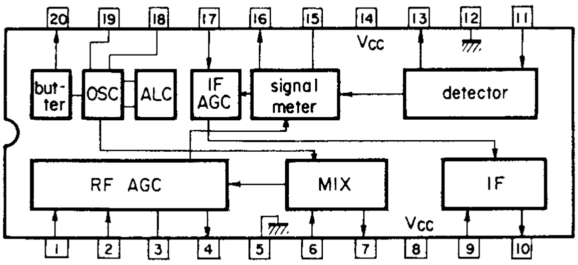
•LA1140 (FM IF Amp. & Quadrature Detector)


Vcc
12
IF OUT
9
Quad IN
11
Vref
13
voltage regulator
AFC Clamp
7
AFC
IF IN
1
2
3
1st
2nd
3rd
4th
5th
6th
quadrature limiter
quadrature det
8
AF OUT
AF mute amp
5
Mute Att Adj
GND
4
level det
level det
level det
inverter
hole det
DC level det
AGC drive
signal level indicator
mute drive
16
AGC
15
S-Meter
14
Mute Drive
6
Mute IN
10
GND

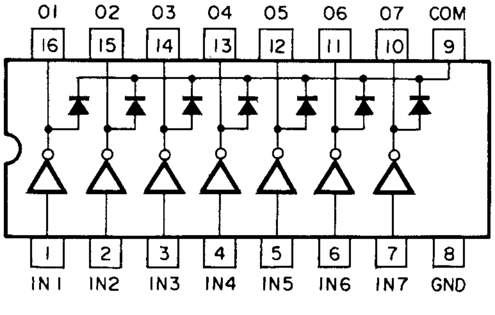
•LA3375 (FM Stereo MPX)


4
3
14
15
16
2
Phase Comparator
VCO
1
9
Power Supply
VCO Stop
FF 19k
FF 38k
Pilot Cancel
13
19k ∠0°C
Sub Decoder
Main
High Cut
Matrix
High Cut Control
Stereo Noise Control
Pilot Detector
Trigger
Stereo Indicator Drive
5
6
7
8
12
11
10

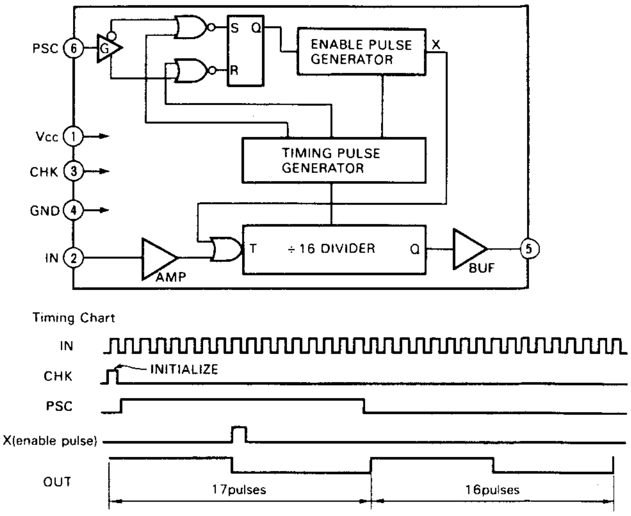
•LA1135 <AM Tuner>


20
19
18
17
16
15
14
13
12
11
Vcc
butter
OSC
ALC
IF AGC
signal meter
detector
RF AGC
MIX
IF
Vcc
1
2
3
4
5
6
7
8
9
10

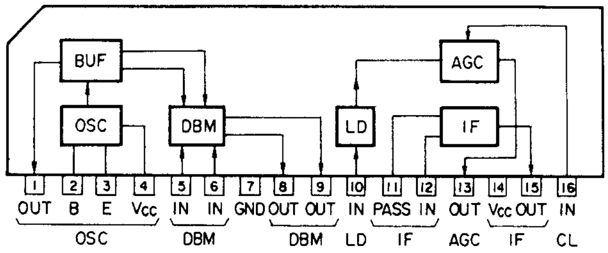
•M54531P <7 Unit Transistor Array with Clamp Diode>


O1
O2
O3
O4
O5
O6
O7
COM
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
IN1
IN2
IN3
IN4
IN5
IN6
IN7
GND

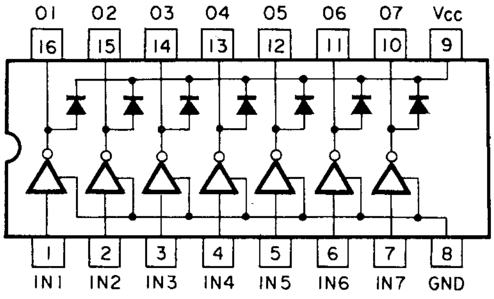
•μPB553AC (Prescaler)


PSC
6
G
S
Q
R
ENABLE PULSE GENERATOR
X
Vcc
1
CHK
3
TIMING PULSE GENERATOR
GND
4
IN
2
AMP
T
÷16 DIVIDER
Q
BUF
5
Timing Chart
IN
CHK
INITIALIZE
PSC
X(enable pulse)
OUT
17pulses
16pulses

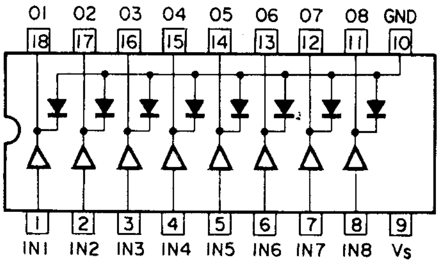
•LA1170 <FM Front-end>


BUF
AGC
OSC
DBM
LD
IF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
OUT
B
E
Vcc
IN
IN
GND
OUT
OUT
IN
PASS
IN
OUT
Vcc
OUT
IN
OSC
DBM
DBM
LD
IF
AGC
IF
CL

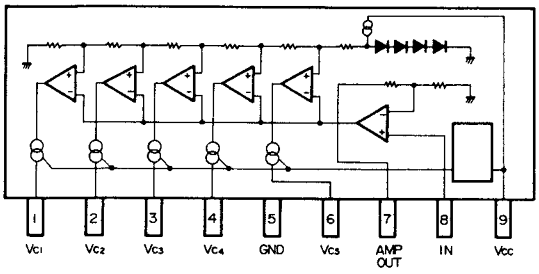
•IR-2411 <7 Unit Transistor Array with Clamp Diode>


O1
O2
O3
O4
O5
O6
O7
Vcc
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
IN1
IN2
IN3
IN4
IN5
IN6
IN7
GND

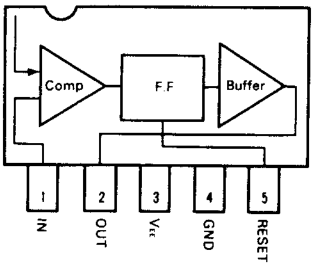
•M54563P <8 Unit Source Type Darington Transistor Array with Clamp Diode>


O1
O2
O3
O4
O5
O6
O7
O8
GND
18
17
16
15
14
13
12
11
10
1
2
3
4
5
6
7
8
9
IN1
IN2
IN3
IN4
IN5
IN6
IN7
IN8
Vs

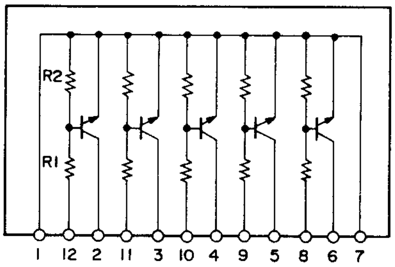
•BA6144 (LED Drive)


1
2
3
4
5
6
7
8
9
Vc1
Vc2
Vc3
Vc4
GND
Vc5
AMP OUT
IN
Vcc

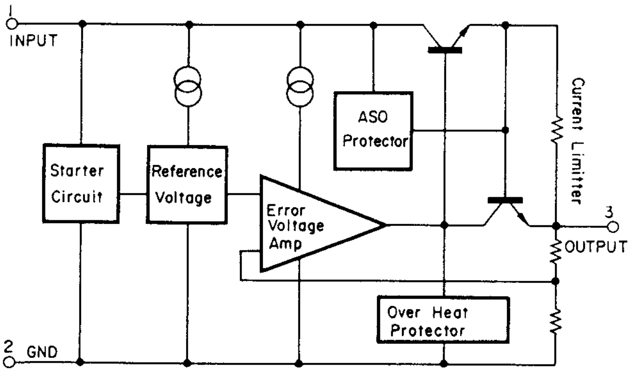
•BA634 (Flip-Flop)


Comp
F.F
Buffer
1
2
3
4
5
IN
OUT
Vcc
GND
RESET

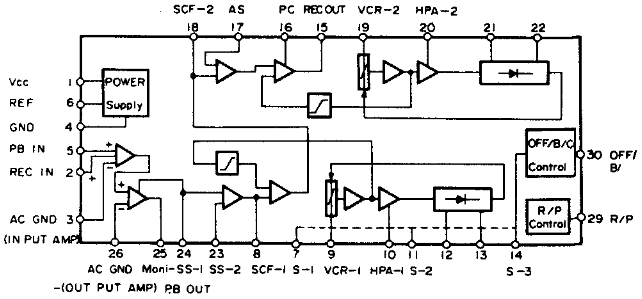
•DT5C114E (Digital Transistor Array)


R2
R1
1
12
2
11
3
10
4
9
5
8
6
7

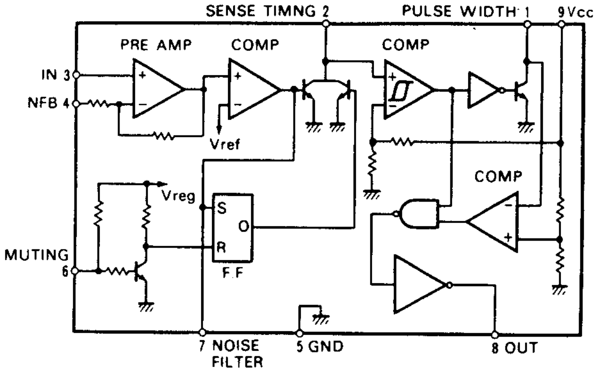
•L78N05 <Regulated Voltage Power Supply>


1
INPUT
Starter Circuit
Reference Voltage
ASO Protector
Error Voltage Amp
Current Limiter
3
OUTPUT
Over Heat Protector
2
GND

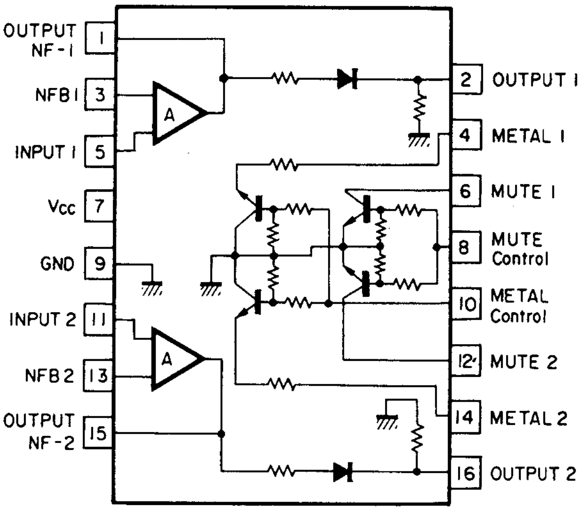
•HA12058NT (B & C Type Dolby Noise Reduction)


SCF-2
AS
PC
REC OUT
VCR-2
HPA-2
18
17
16
15
19
20
21
22
Vcc 1
REF 6
GND 4
PB IN 5
REC IN 2
AC GND 3
(IN PUT AMP)
POWER Supply
OFF/B/C Control
30 OFF/B/
R/P Control
29 R/P
26
25
24
23
8
7
9
10
11
12
13
14
AC GND
Moni-SS-1
SS-2
SCF-1
S-1
VCR-1
HPA-1
S-2
S-3
-(OUT PUT AMP)
PB OUT

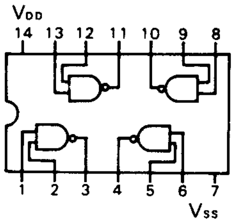
•BA338 (AMPS)


SENSE TIMNG 2
PULSE WIDTH 1
9Vcc
PRE AMP
COMP
COMP
IN 3
NFB 4
Vref
COMP
Vreg
S
O
R
F.F
MUTING 6
7 NOISE FILTER
5 GND
8 OUT

•BA-3406 <Dual Pre Amp.>

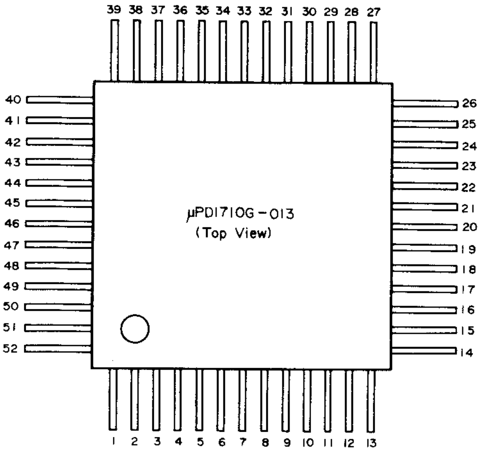

OUTPUT NF-1
1
NFB1
3
INPUT 1
5
Vcc
7
GND
9
INPUT 2
11
NFB2
13
OUTPUT NF-2
15
A
A
2
OUTPUT 1
4
METAL 1
6
MUTE 1
8
MUTE Control
10
METAL Control
12
MUTE 2
14
METAL 2
16
OUTPUT 2

•μPD4011BC/M4011BP (Quad NAND)

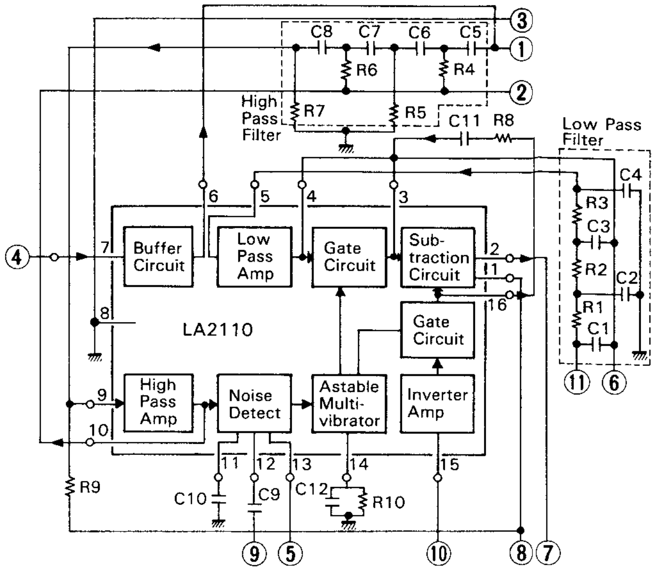

VDD
14
13
12
11
10
9
8
1
2
3
4
5
6
7
Vss

•μPD1710G-013

Fig. 2-1


39 38 37 36 35 34 33 32 31 30 29 28 27
40
41
42
43
44
45
46
47
48
49
50
51
52
26
25
24
23
22
21
20
19
18
17
16
15
14
μPD1710G-013
(Top View)
1 2 3 4 5 6 7 8 9 10 11 12 13

•NC3S300 <FM Noise Canceller>


③
①
②
C8
C7
C6
C5
R6
R4
High Pass Filter
R7
R5
C11
R8
Low Pass Filter
C4
R3
C3
R2
C2
R1
C1
④
6
5
4
3
7
2
11
16
8
9
10
Buffer Circuit
Low Pass Amp
Gate Circuit
Sub-traction Circuit
Gate Circuit
LA2110
High Pass Amp
Noise Detect
Astable Multi-vibrator
Inverter Amp
11
12
13
14
15
R9
C10
C9
C12
R10
⑪
⑥
⑨
⑤
⑩
⑧
⑦

•Terminal Function of IC μPD1710G-013

Pin No.	Label	Input/Output	Description
2	MUTE	Output	Terminal for outputting muting. Active at Low level. (1) When received signal band changes; (2) When TAPE (PD_3) changes; (3) When preset memory is called; (4) When MANUAL UP/DOWN operates; (5) When AUTO UP/DOWN operates; (6) When AUTO SCAN operates; (7) When preset memory SCAN operates.
3, 4	X_2, X_1	Input, Output	Terminals for conneclting a quartz oscillator (4.5 MHz)
5, 6, 7	V_{DD}	—	Power supply terminal (+5V)
8, 11	E_{01}, E_{02}	Output	Terminals for deriving PLL error outputs in order to form PLL by externally connecting a low-pass filter.
9, 10	GND	–	Ground terminal
12	CE	Input	Terminal for inputting a chip enable signal: normal operation at High-level, back-up operation at Low-level.
13	SD	Input	Terminal for inputting Auto-Search stop. Stopped at High-level.
15	FM	Input	Terminal for inputting a count signal from prescaler through AC capacitor coupling.
16	PSC	Output	Terminal for outputting control signals to prescaler (μPB553AC)
17	SK-SD	Input	Terminal for inputting SK STOP signal. Stopped at LOW-level.
18	AM	Input	Terminal for inputting V_{CO} of AM and LM through AC coupling.
20	MEMORY	Output	Terminal for outputting a High-level signal for 5 secs when memory write is being enabled.
25	SDK	Output	Terminal for outputting SK set signal. When SDK switch is depressed, output level is inverted.
26	MW	Output	Terminal for outputting a High-level signal in MW.
29	FM	Output	Terminal for outputting an FM-tuner control output. At High level when TAPE terminal is at Low-level (radio mode) and additionally FM is being selected.
31	TAPE	Input	Terminal for inputting tape modes. Tape mode is selected by High-level and radio mode is selected by Low level.
33	Voo	—	Power supply terminal (+5V) connected to pin 7 internally.
34~38 40 41	Sa~Se Sf Sg	Output Output Output	Terminal for outputting 7-segment signal for display digits. Simultaneously used as key-matrix alternate switches and key lease of momentary switch. Active at High-level (3V).
42~44,46	K0~K3	Input	Terminals for inputting momentary key and initializing matrix sense signals.
48~52 1	D6~ D21	Output	Terminals for outputting displayed figure signals. D_2 is used for diode-matrix lease. Active at High-level.

Note: Pins 14, 19, 21-24, 27, 28, 30, 32, 39, 45, and 47 pins are not used.

3. DESCRIPTION OF EACH FUNCTION & MOMENTARY SWITCHES

3-1. Description of Each Function

<table>
<tr><th>Diode SW</th><th>KEY MATRIX</th><th>FUNCTION</th><th>fIC2, μPD1710G Type</th></tr>
<tr><td>BAND 1
BAND 2</td><td>D1-K1
D1-K0</td><td>•Switches for selecting bands (FM1, FM2, FM3, LW)
<table>
<tr><th rowspan="2">BAND 1</th><th rowspan="2">BAND 2</th><th rowspan="2">Used keys</th><th colspan="5">Usable bands</th></tr>
<tr><th>FM1</th><th>FM2</th><th>FM3</th><th>MW</th><th>LW</th></tr>
<tr><td>OFF</td><td>OFF</td><td>FM MW LW</td><td>○</td><td></td><td></td><td>○</td><td>○</td></tr>
<tr><td>OFF</td><td>ON</td><td>FM</td><td>○</td><td>○</td><td>○</td><td></td><td></td></tr>
<tr><td></td><td></td><td>MW</td><td></td><td></td><td></td><td>○</td><td></td></tr>
<tr><td></td><td></td><td>LW</td><td></td><td></td><td></td><td></td><td>○</td></tr>
<tr><td></td><td></td><td>FM1 → FM2 → FM3</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>ON</td><td>OFF</td><td>BAND</td><td>○</td><td></td><td></td><td>○</td><td>○</td></tr>
<tr><td></td><td></td><td>FM1 → MW → LW</td><td></td><td></td><td></td><td></td><td></td></tr>
</table></td><td>013</td></tr>
<tr><td>IF3</td><td>D2-K0</td><td>•Presetting of frequencies of MW and LW
<table>
<tr><th>IF3</th><th>IF frequency</th></tr>
<tr><td>OFF</td><td>459 kHz</td></tr>
<tr><td>ON</td><td>450 kHz</td></tr>
</table></td><td>013</td></tr>
</table>

3-2. Momentary-Switch Functions

fIC2 PIN NO.	K3 (46)	K2 (44)	K1 (43)	K0 (42)
Sa (34)	AU	AD	SCAN	
Sb (35)	MU	MD	M5	M6
Sc (36)	M1	M2	M3	M4
Sd (37)	SDK			
Se (38)		PRESET SCAN	MEMORY	
Sf (40)	FM, FM1, BAND		LW	MW
Sf (42)	FM, FM1, BAND	FM2	FM3	MW

•Description of Each Function (Momentary-Switch)

Labels	Description
AU AD	These are UP and DOWN keys for automatic tuning. When started by the use of these keys, the automatic research operation is being executed until SD terminal changes to High-level. When one of these keys is depressed again during the search operation, the operation stops. The searching speed is about 40ms per step in FM and MW and about 80ms per step in CW.
MU MD	These are UP and DOWN keys for manual tuning. Whenever depressed once the frequency changes by one step. When kept depressed for 0.5 sec or more, the tuning operation is quickly forwarded. The quick-forward speed is about 20ms per step in FM and 40ms per step in MW and LW.
SCAN	This is a key for scanning in the up-direction only during automatic tuning. That is, when SD terminal changes to High-level during automatic tuning, the frequency at that time is held as it is for 5sec. When nothing is made thereafter, the automatic tuning operation restarts. By depressing this key once again for 5sec, the scanning operation is released.
M1 ~ M6	These are preset memory buttons. Each independent memory unit is provided internally for each band for calling each preset station. To write any desired station in the memory, depress one of M1 to M6 after having depressed MEMORY button.
FM FM-1 BAND MW	These are band-selecting keys for calling each independent band, respectively. In combination of initializing BAND-CHANGE-1 and BAND-CHANGE-2, it is possible to change the function from independent FM operation to one-button band selecting operation. (Refer to Paragraph ''Initialization'')
PRESET SCAN	This is a key for calling the preset memory automatically during each 5sec. When this key is depressed once more during the holding operation of 5sec, the scanning operation stops at the present preset memory.
SDK	When this key is depressed, the SDK indicator lights up and you can select and listen to only those FM stations broadcasting traffic information. When the SDK key is depressed and tuning is performed using the TUNE/SEEK key, stations broadcasting traffic information can be picked up as a result of the discrimination (SK) signals transmitted by only those stations. The SK indicator lights at this time. SK indicator: When FM band key and SDK key are depressed and a station broadcasting traffic information is tuned in, the indicator lights.
MEMORY	This is key for holding the memory output port (pin no. 20) at High-level for 5sec when depressed. When one of M1 to M6 is depressed during this holding operation, the writing ends. After 5sec, the holding operation is automatically released. When it is desired to release this operation within 5sec, depress this memory key twice.
	In Model Nos., it is possible to adjust the minute and the hour by depressing this switch together with MU/MD keys during clock display. Take care, depress this key before depressing MU/MD keys.

4. OPERATION OF DISPLAY FUNCTION

•Terminal Combination for Lighting of Display LED

fIC2 PIN NAME (PIN NO.)	D_6 (48)	D_5 (49)	D_4 (50)	D_3 (51)	D_2 (52)	D_1 (1)
Sa (34)	COLON D6	—	a	a	a	M1 (SLD1)
Sb (35)	—	b	b	b	b	M2 (SLD2)
Sc (36)	—	c	c	c	c	M3 (SLD3)
Sd (37)	—	—	d	d	d	M4 (SLD4)
Se (38)	—	—	e	e	e	M5 (SLD5)
Sf (40)	COLON D4, D5	—	f	f	f	M6 (SLD6)
Sg (41)	kHz	D8 $\boxed{5}$	g	g	g	—
		Digit 1	Digit 2	Digit 3	Digit4	MEMORY

NOTE

PIN D1 ~ D6 .... Active H

Pin Sa ~ Sg................ Active H

Fig. 4-1 LED No. of Indicator

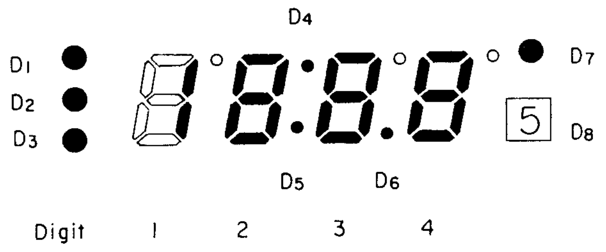

D1 ~ 8→Diode No.
D4
D1
D2
D3
D7
5
D8
D5
D6
Digit
1
2
3
4

Fig. 4-2

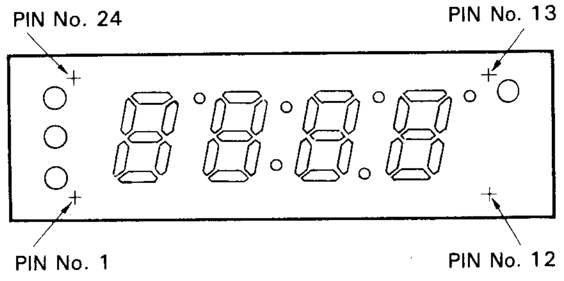

PIN No. 24
PIN No. 13
PIN No. 1
PIN No. 12

Fig. 4-3

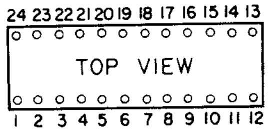

24 23 22 21 20 19 18 17 16 15 14 13
TOP VIEW
1 2 3 4 5 6 7 8 9 10 11 12

Fig. 4-4

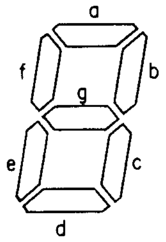
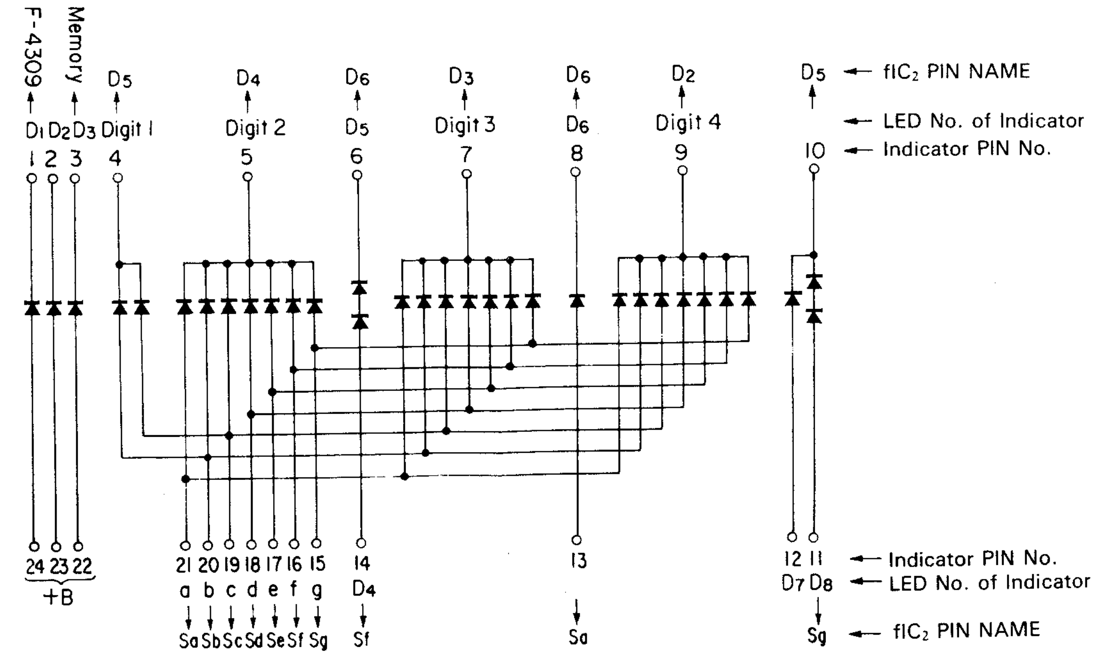
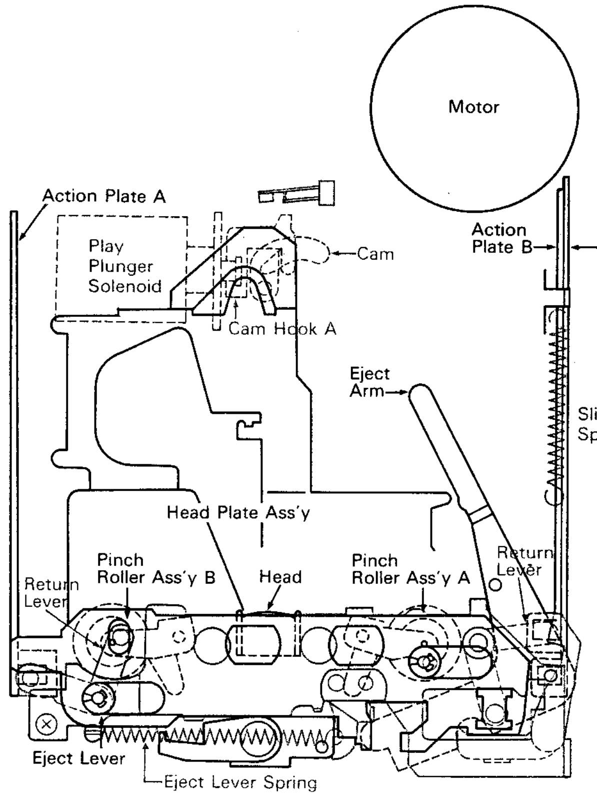


Fig. 4-5 Interior Block Diagram of Indicator, SPL1

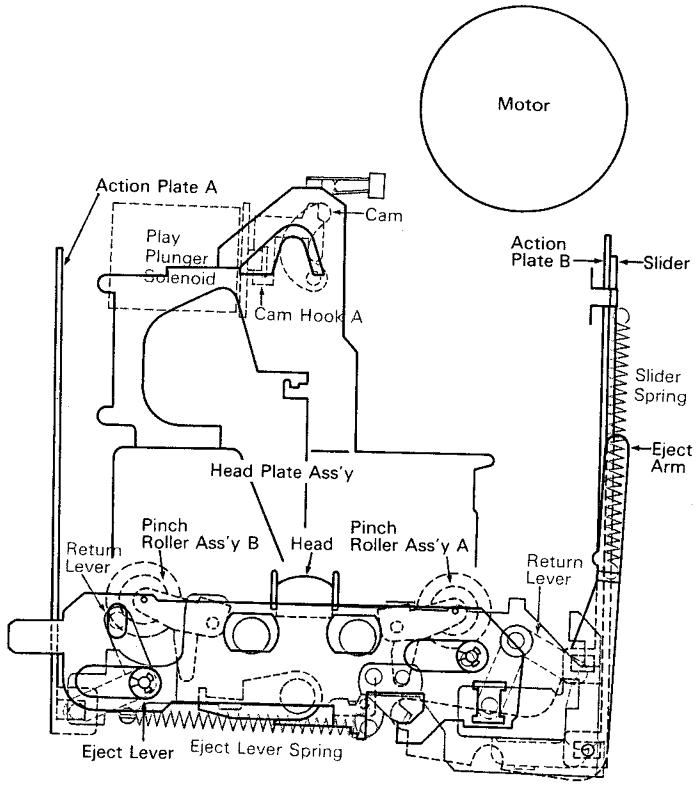

F-4309
Memory
D5
D4
D6
D3
D6
D2
D5
← fIC2 PIN NAME
D1 D2 D3 Digit 1
Digit 2
D5
Digit 3
D6
Digit 4
← LED No. of Indicator
1 2 3 4
5
6
7
8
9
10
← Indicator PIN No.
24 23 22
+B
21 20 19 18 17 16 15
a b c d e f g
Sa Sb Sc Sd Se Sf Sg
14
D4
Sf
13
Sa
12 11
← Indicator PIN No.
D7 D8
← LED No. of Indicator
Sg
← fIC2 PIN NAME

5. OPERATION OF MECHANISM

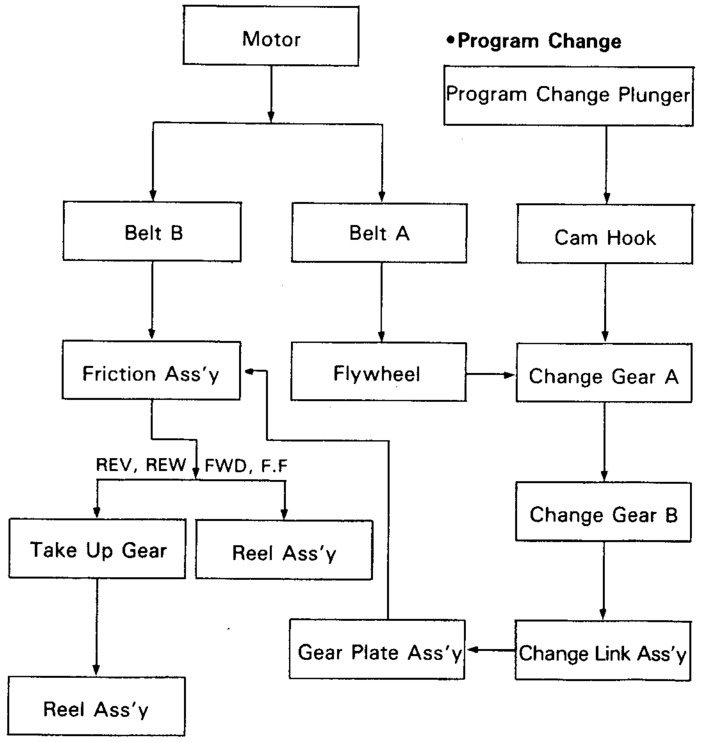
5-1. Top View of Mechanism Ass'y

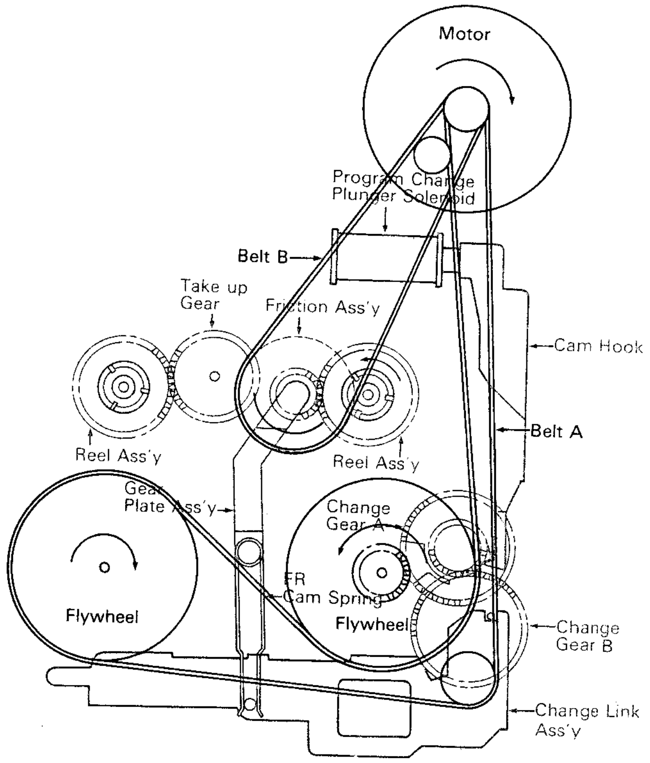

Motor
Action Plate A
Play Plunger Solenoid
Cam
Action Plate B
Slider
Cam Hook A
Eject Arm
Slider Spring
Head Plate Ass'y
Pinch Roller Ass'y B
Head
Pinch Roller Ass'y A
Return Lever
Return Lever
Eject Lever
Eject Lever Spring

•Loading the Cassette Tape


Motor
Action Plate A
Cam
Play Plunger Solenoid
Action Plate B
Slider
Cam Hook A
Slider Spring
Eject Arm
Head Plate Ass'y
Pinch Roller Ass'y B
Head
Pinch Roller Ass'y A
Return Lever
Return Lever
Eject Lever
Eject Lever Spring

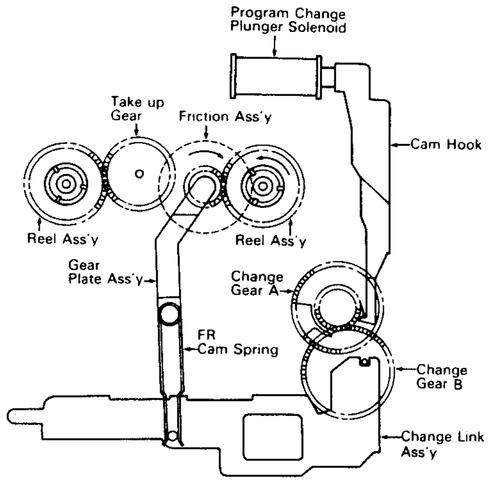
5-2. Torque Transportation Flowchart

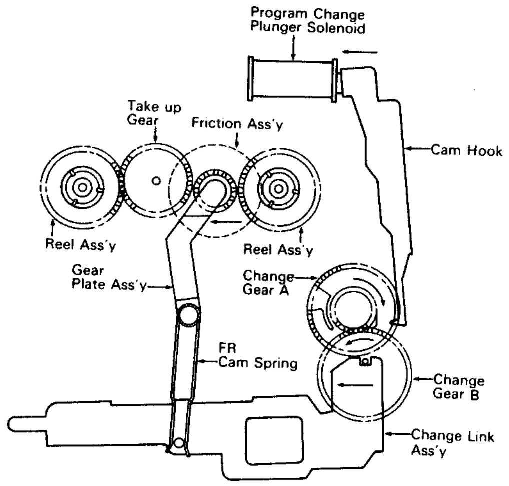

Motor
•Program Change
Program Change Plunger
Belt B
Belt A
Cam Hook
Friction Ass'y
Flywheel
Change Gear A
REV, REW
FWD, F.F
Change Gear B
Take Up Gear
Reel Ass'y
Gear Plate Ass'y
Change Link Ass'y
Reel Ass'y


Motor
Program Change Plunger Solenoid
Belt B
Take up Gear
Friction Ass'y
Cam Hook
Reel Ass'y
Reel Ass'y
Belt A
Gear Plate Ass'y
Change Gear A
FR Cam Spring
Flywheel
Flywheel
Change Gear B
Change Link Ass'y

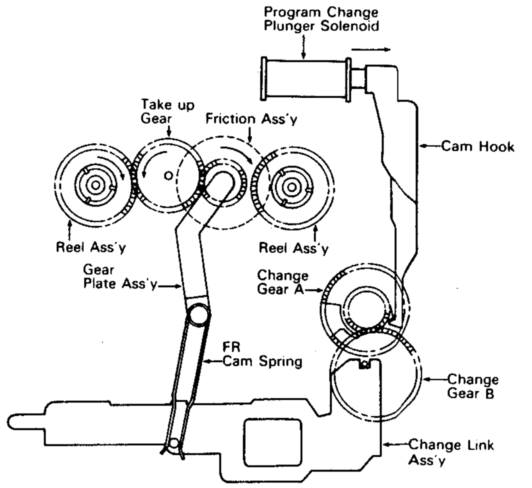
5-3. Torque Transportation of Program Change

●FWD(▶), F.F(≫)


Program Change Plunger Solenoid
Take up Gear
Friction Ass'y
Cam Hook
Reel Ass'y
Reel Ass'y
Gear Plate Ass'y
Change Gear A
FR Cam Spring
Change Gear B
Change Link Ass'y


Program Change Plunger Solenoid
Take up Gear
Friction Ass'y
Cam Hook
Reel Ass'y
Reel Ass'y
Gear Plate Ass'y
Change Gear A
FR Cam Spring
Change Gear B
Change Link Ass'y

●REV(◀), REW(≪)


Program Change Plunger Solenoid
Take up Gear
Friction Ass'y
Cam Hook
Reel Ass'y
Reel Ass'y
Gear Plate Ass'y
Change Gear A
FR Cam Spring
Change Gear B
Change Link Ass'y

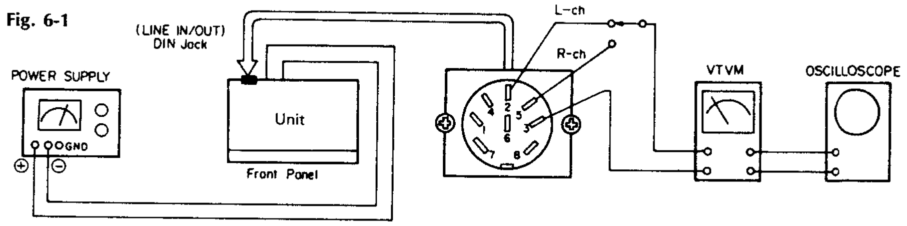
6. ADJUSTMENT

6-1. Dolby Level Adjustment

Condition:

1. Clean the playback head before adjustment.
2. Prepare the test tape SCT-L400.
3. Turn off the dolby switch on.
4. Set the tape selector switch to Normal position.
5. Connect the test equipments as Fig. 6-1.

Fig. 6-1


(LINE IN/OUT) DIN Jack
L-ch
R-ch
POWER SUPPLY
GND
Unit
Front Panel
VTVM
OSCILLOSCOPE

STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT
1.	Head azimuth adjustment	SCT-F10K	DIN Jack (Pin No. 2 for L-ch, Pin No. 5 for R-ch) VTVM, Scope (See Fig. 6-1)	1. Set vVR1 (See Top View on page 18) to mechanically center position. 2. Playback SCT-F10K.	Turn the azimuth nut to obtain maximum output on both FWD and REV PLAY. (See Fig. 6-2, 6-3 & Top View on page 18)
2.	DOLBY Level	SCT-L400	Same as above	Playback (FWD) SCT-L400.	Adjust vVR1 (L-ch) and vVR1 (R-ch) to obtain 120mV (See Top View on page 18)

Fig. 6-2

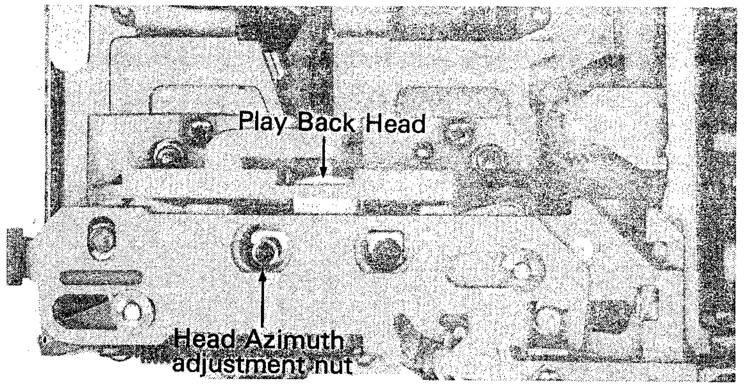
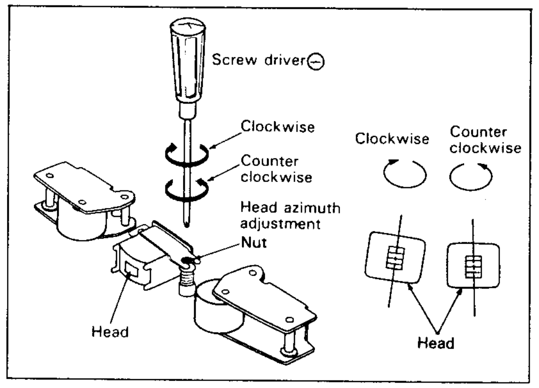

Play Back Head
Head Azimuth adjustment nut

Fig. 6-3


Screw driver⊖
Clockwise
Counter clockwise
Head azimuth adjustment Nut
Head
Clockwise
Counter clockwise
Head

•Abbreviations

Equipment

AM FM Generator Oscilloscope	Genescope
AM Standard Signal Generator	AM SSG
FM Standard Signal Generator	FM SSG
FM Stereo Generator	Stereo SG
Oscilloscope	Scope
Audio Oscillator	Audio Osc.
Distortion Meter	Dist. Meter

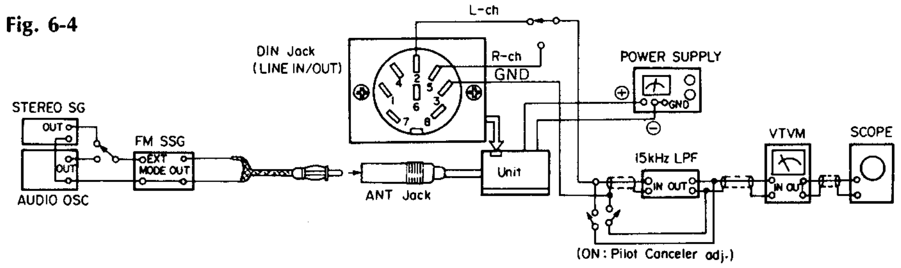
Others

Antenna	ANT.
Modulation	MOD.
Total Harmonic Distortion	T.H.D.

6-2. FM Adjustment (See Fig. 6-5, Fig. 6-6)

Note:
1. SELECTOR .... FM
2. MONO .... OFF
3. LOC .... OFF
4. Connections are shown in Fig. 6-4

Fig. 6-4


L-ch
DIN Jack (LINE IN/OUT)
R-ch
GND
POWER SUPPLY
GND
STEREO SG
OUT
FM SSG
EXT MODE OUT
AUDIO OSC
ANT Jack
Unit
15kHz LPF
IN OUT
VTVM
SCOPE
(ON: Pilot Conceler adj.)

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	Off set Adj.	98MHz ANT Input 65 dBf (59.8dB), No MOD. FM SSG.	ANT Connector or Point Ⓐ & Ground	Between TP1 and TP2 of F-4864 DC Volt Meter	dT1 (F-4864)	DC 0V ± 10mV	MONO ..... ON
2.	PLL VCO Adj.	98 MHz ANT Input 65dBf (59.8dB), FM SSG, Pilot 19kHz (9% MOD.), R or L MODE 1kHz + Pilot (100% MOD.), STREO SG	Same as above	Stereo indicator	dVR5 (F-4864)	Light indicator	Adjust the dVR5 within center or lighting level
	PLL VCO Adj. In Case of Using Freq. Counter	98MHz ANT Input 65dBf (59.8dB), FM SSG. NO MOD.	Same as above	TP3 through high impedance prove Freq. Counter	dVR5 (F-4864)	76kHz ± 50Hz	
3.	19kHz Pilot Canceler Adj.	98 MHz ANT Input 65dBf (59.8dB), 19kHz (9% MOD.), FM SG	Same as above	DIN Jack (Pin No. 2 for L-ch) VTVM & Scope	dVR4 (F-4864)	Minimum Output	
4.	Separation Adj.	98MHz ANT Input 65dBf (59.8dB), FM SSG. Pilot 19kHz (9% MOD.), L MODE 1 kHz + Pilot (100% MOD.) STEREO SG.	Same as above	DIN Jack (Pin No. 2 for L-ch) VTVM & Scope		Read this indication on VTVM	
				DIN Jack R (Pin No.5 for R-ch) VTVM & Scope	dVR3 (F-4864)	—25 ~ —30dB from the indication above.	Confirm L-CH→R-CH
5.	Stereo Noise Adj.	98MHz ANT Input 45dBf (39.8dB), FM SSG. Pilot 19kHz (9% MOD.), L MODE 1kHz + Pilot (100% MOD.) STEREO SG.	Same as above	DIN Jack Pin No.2 for L-ch) VTVM & Scope		Read this indication on VTVM	
				DIN Jack R (Pin No.5 for R-ch) VTVM & Scope	dVR2 (F-4864)	—15dB from the indication above.	Confirm L-CH→R-CH
6.	Auto stop Level Adj.	98MHz ANT Input 35dBf (29.8dB) 1kHz (100% MOD.) FM SG	Same as above	Digital Display	dVR1 (F-4864)	Tune the tuner to 98MHz by using the automatic search tuning operation.	
7.	57kHz Free Run Adj.			TP1 (F-4310) through high impedance prove Freq. Counter	zVR1 (F-4310)	57kHz	SDK Switch ..... ON
8.	125 Hz Free Run Adj.			TP2 (F-4310) through high impedance prove Freq. Counter	zVR2 (F-4310)	125 Hz	SDK Switch ..... ON

◆ Technical Hint for FM Adjustment

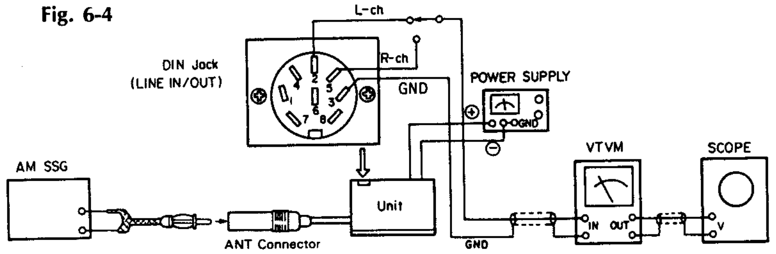
- The impedance of FM antenna terminal is 75Ω. Therefore, connect coaxial cable (3C-2V etc.) between FM SG and antenna terminal when wiring.
- There are two kind in indication of FM SG output attenuator
  1. Attenuator with marking of 75Ω open ... open indication type.
  2. Attenuator with marking of 75Ω load or close ... load or close indication type.
- FM SG output level in this FM adjustment are described as open indication type. The right table shows relations among FM SG attenuator indication (dB), available power ratio (dBf) and antenna terminal voltalge (dB/μV) in each indication type.

	FM SG Attenuator Indication	Available Power Ratio	Antenna Terminal Voltage
Open indication type	0 dB 60 dB	5.2 dBf 65.2 dBf	6 dB/μV 66 dB/μV
Load or close indication type	0 dB 54 dB	11.2 dBf 65.2 dBf	12 dB/μV 66 dB/μV

6-3. AM Tuning Adjustment (See Fig. 6-5, Fig. 6-7)

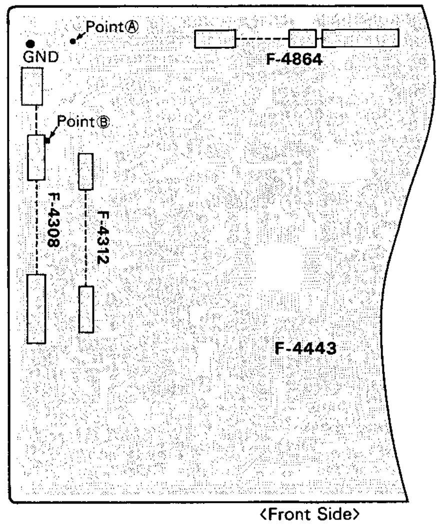
Note:
1. MONO .... ON
2. SELECTOR .... AM
3. Connections are shown in Fig. 6-4

Fig. 6-4


L-ch
DIN Jack (LINE IN/OUT)
R-ch
GND
POWER SUPPLY
AM SSG
Unit
ANT Connector
GND
VTVM
IN OUT
SCOPE

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	522kHz Tuning Adj.	No Input	———	Point Ⓑ (Pin No. 4 of AM Connector, F-4443 DC Volt Meter	eT5 (F-4308)	1.0V ~ 1.6V	•Repeat procedures as stated in subject in step 1 & 2.
2.	1611kHz Tuning Adj.	No Input	———	Same as above	eTC6 (F-4308)	7.5 ~ 8.2V	
3.	603kHz RF Adj.	603kHz ANT Input, 30dB 400Hz (30% MOD.), AM SSG	ANT Connector or Point Ⓐ & Ground	DIN Jack (Pin No. 2 for L-ch, Pin No. 5 for R-ch) VTVM & Scope	eT1, eT2 (F-4308)	Max. Output	•Repeat procedures as stated in subject in step 3 & 4.
4.	1404kHz RF Adj.	1404kHz ANT Input 30dB 400Hz (30% MOD.), AM SSG	Same as above	Same as above	eTC1, eTC2 (F-4308)	Max. Output	
5.	Auto Stop Level Adj.	999kHz ANT Input 35dB 400Hz (30% MOD.), AM SSG	Same as above	Digital Display	eVR1 (F-4308)	Tune the tuner to 999kHz by using the Automatic Search tuning operation	•MONO.....OFF

Fig. 6-5 F-4443
<Conductor Side>


Point Ⓐ
GND
F-4864
Point Ⓑ
F-4308
F-4312
F-4443

<Front Side>

Fig. 6-6 F-4864
Component Side

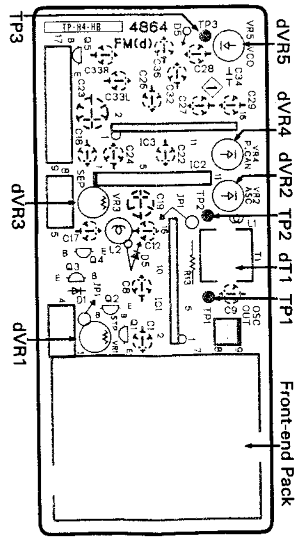

TP3
4864
dVR5
dVR4
dVR2
TP2
dT1
TP1
dVR3
dVR1
Front-end Pack

Fig. 6-7 F-4308
Component Side

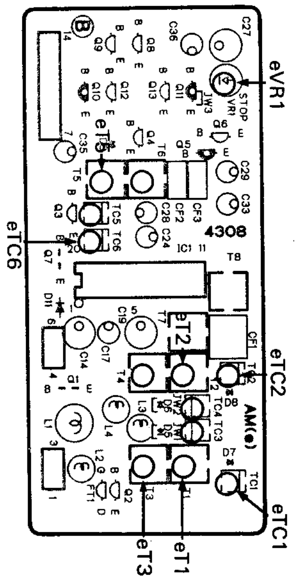
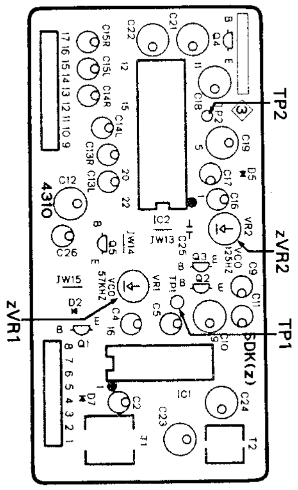

eVR1
eT5
4308
eTC6
eTC2
AM
eTC1
eT3
eT1
eT2

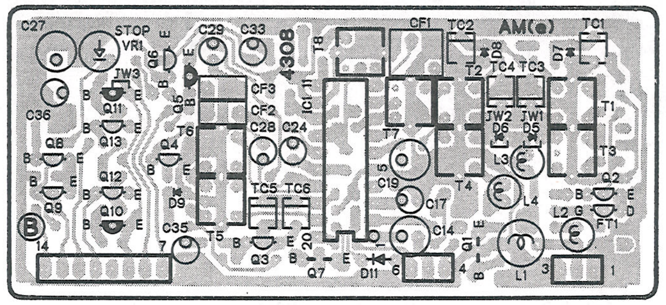
Fig. 6-8 F-4310
Component Side


TP2
4310
zVR2
zVR1
TP1
SDK

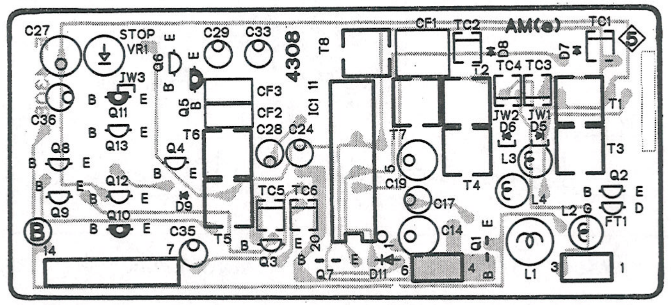
7. PARTS LOCATION & PARTS LIST

7-1. F-4308 AM Tuner Circuit Board (Stock No. 00770101)

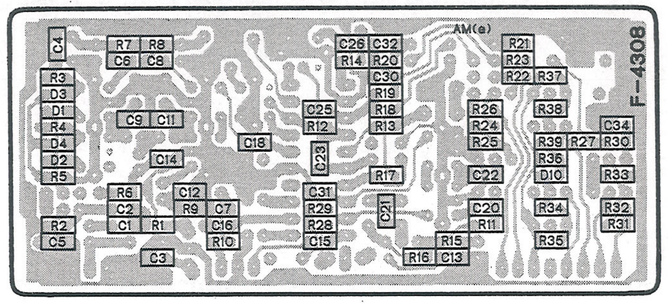
Top View (Component side) with Bottom Side Pattern



Top View (Component side) with Top Side Pattern



Chip Parts View with Bottom Side Pattern



Parts List

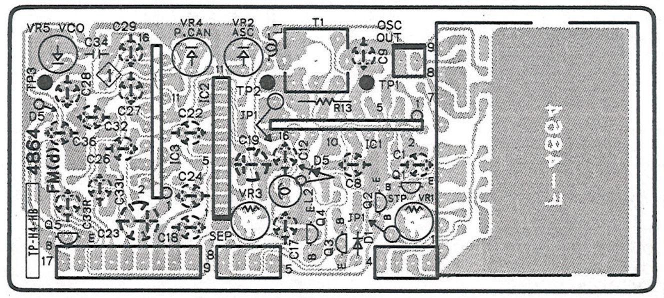
Parts No.	Stock No.	Description
•Transistor		
eQ1	46540801	2SC2878
	or 46604301	2SC3327
eQ2	46367301	2SC2458
eQ5	46367001	2SA1115
eQ6	46367101	2SC2603
	or 46367301	2SC2458
eQ7	46367101	2SC2603
	or 46367301	2SC2458
eQ8	46367101	2SC2603
	or 46367301	2SC2458
eQ9	46367301	2SC2458
•FET		
eFT1	46835200	2SK315-F
	or 46835201	2SK315-G
•IC		
eIC1	46669000	LA1135
•Diode		
eD1	46852000	RLS-73 Chip
eD3	46852000	RLS-73 Chip
eD7	46254600	1SV100
	or 46835100	1SV149
eD8	46254600	1SV100
	or 46835100	1SV149
eD9	46254600	1SV100
	or 46835100	1SV149
eD11	46421300	1N60PSP
eR1	46745200	100Ω 1/8W Chip R.
eR2	46752400	100kΩ 1/8W Chip R.
eR3	46744400	47Ω 1/8W Chip R.
eR5	46748400	2.2kΩ 1/8W Chip R.
eR7	46753200	220kΩ 1/8W Chip R.
eR8	46753200	220kΩ 1/8W Chip R.
eR10	46749200	4.7kΩ 1/8W Chip R.
eR11	46750800	22kΩ 1/8W Chip R.
eR12	46744400	47Ω 1/8W Chip R.
eR13	46744400	47Ω 1/8W Chip R.
eR14	46745200	100Ω 1/8W Chip R.
eR17	46750000	10kΩ 1/8W Chip R.
eR18	46750000	10kΩ 1/8W Chip R.
eR19	46748600	2.7kΩ 1/8W Chip R.
eR20	46749200	4.7kΩ 1/8W Chip R.
eR21	46749200	4.7kΩ 1/8W Chip R.
eR22	46750000	10kΩ 1/8W Chip R.
eR23	46750600	18kΩ 1/8W Chip R.
eR26	46751600	47kΩ 1/8W Chip R.
eR27	46749200	4.7kΩ 1/8W Chip R.
eR28	46749200	4.7kΩ 1/8W Chip R.
eR29	46748800	3.3kΩ 1/8W Chip R.
eR30	46751600	47kΩ 1/8W Chip R.
eR31	46751600	47kΩ 1/8W Chip R.
eR32	46750000	10kΩ 1/8W Chip R.
eR33	46745200	100Ω 1/8W Chip R.
eR40	46750000	10kΩ 1/8W Chip R.
eR41	46746400	330Ω 1/8W Chip R.
eC1	46854500	22000pF 50V Chip C.
eC2	46854500	22000pF 50V Chip C.
eC3	46854500	22000pF 50V Chip C.
eC4	46854900	47000pF 50V Chip C.
eC6	46854500	22000pF 50V Chip C.
eC7	46854500	22000pF 50V Chip C.
eC8	46854500	22000pF 50V Chip C.
eC10	46854900	47000pF 50V Chip C.
eC13	46854500	22000pF 50V Chip C.
eC14	46847400	100μF 10V E.C.
eC15	46795500	10000pF 50V Chip C.
eC16	46854500	22000pF 50V Chip C.
eC17	46850300	1μF 50V E.C.
eC18	46854500	22000pF 50V Chip C.
eC19	46716500	22μF 16V E.C
eC20	46856600	510pF 50V Chip C.
eC23	46854900	47000pF 50V Chip C.
eC24	46849000	3.3μF 35V E.C.
eC25	46795500	10000pF 50V Chip C.
eC26	46854500	22000pF 50V Chip C.
eC27	46716700	47μF 16V E.C.
eC28	46848300	4.7μF 25V E.C.
eC29	46849000	3.3μF 35V E.C.
eC30	46854700	33000pF 50V Chip C.
eC31	46854900	47000pF 50V Chip C.
eC32	46795500	10000pF 50V Chip C.
eC33	46849700	0.1μF 50V E.C.
eC34	46854500	22000pF 50V Chip C.
eC36	46847600	10μF 16V E.C.
eTC1	46613200	Trimmer Capacitor 20pF
eTC2	46613200	Trimmer Capacitor 20pF
eTC6	46613300	Trimmer Capacitor 30pF
eCF1	46724500	Ceramic Filter, SFP450H
eCF2	46578100	Ceramic Filter, BFU-450C10N
eCF3	46578100	Ceramic Filter, BFU-450C10N
eL1	46838300	Inductor 3.3mH

Parts List <F-4308>

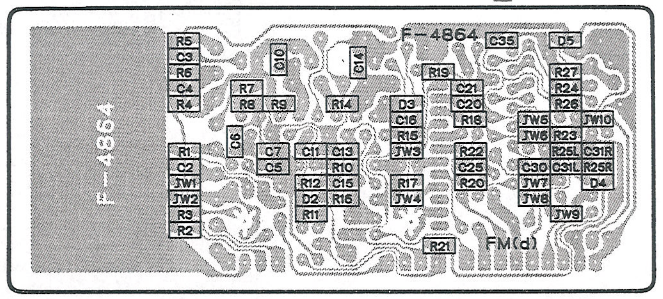
Parts No.	Stock No.	Description
eL2	46167600	Inductor 100μH
eL3	46166800	Inductor 4.7μH
eT1	46835300	MW RF Coil (1)
eT2	46835400	MW RF Coil (2)
eT5	46835500	MW RF Coil
eT7	46724300	AM IF Coil
eT8	46836000	AM IF Coil (2)
eVR1	46839400	2.2kΩ S.V.R., Auto Stop Level Adj.

7-2. F-4864 FM Circuit Board (Stock No. 00853908)

Top View (Component side) with Bottom Side Pattern



Chip Parts View with Bottom Side Pattern



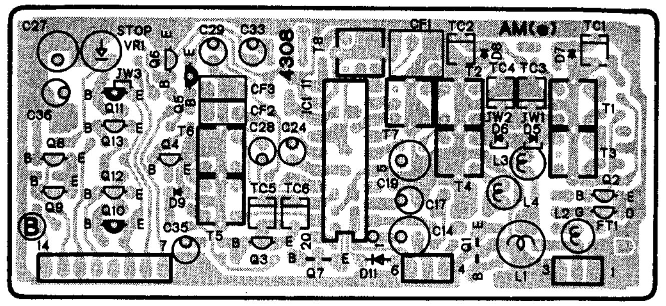
Parts List

Parts No.	Stock No.	Description
dZ1	48161200	FM Frontend ET-A041
•Transistor		
dQ1	46604301	2SC3327
dQ2	46719900	DTC124
dQ3	46604301	2SC3327
dQ4	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ5	48171600	DTC114YS
•IC		
dIC1	46465000	LA1140
dIC2	48159600	NC3S300
dIC3	46465200	LA3375
•Diode		
dD1	46078000	1SS133
dD2	46852000	RLS-73 Chip
dD3	46852000	RLS-73 Chip
dD4	46852000	RLS-73 Chip
dD5	46852000	RLS-73 Chip
dD6	46078000	1SS133
dD7	03111600	1S2473
	or 03111800	1S1588
dJW1	46741100	Cross Conductor Chip
dR1	46747600	1kΩ 1/8W Chip R.
dR3	46746000	220Ω 1/8W Chip R.
dR4	46745000	10kΩ 1/8W Chip R.
dR5	46746600	390Ω 1/8W Chip R.
dR6	46742800	10Ω 1/8W Chip R.
dR7	46745600	150Ω 1/8W Chip R.
dR8	46745800	180Ω 1/8W Chip R.
dR9	46753200	220kΩ 1/8W Chip R.
dR10	46750800	22kΩ 1/8W Chip R.
dR11	46750000	10kΩ 1/8W Chip R.
dR12	46747600	1kΩ 1/8W Chip R.
dR14	46750200	12kΩ 1/8W Chip R.
dR15	45753200	220kΩ 1/8W Chip R.
dR16	46749200	4.7kΩ 1/8W Chip R.
dR17	46751600	47kΩ 1/8W Chip R.
dR18	46747600	1kΩ 1/8W Chip R.
dR19	46750800	22kΩ 1/8W Chip R.
dR20	46750000	10kΩ 1/8W Chip R.
dR21	46745200	100Ω 1/8W Chip R.
dR22	46748400	2.2kΩ 1/8W Chip R.
dR24	46747600	1kΩ 1/8W Chip R.
dR25	46748800	3.3kΩ 1/8W Chip R.
dR26	46752400	100kΩ 1/8W Chip R.
dR27	46750200	12kΩ 1/8W Chip R.
dR28	46747600	1kΩ 1/8W Chip R.
dC1	46849700	0.1μF 50V E.C.
dC2	46854500	22000pF 50V Chip C.
dC3	46794300	1000pF 50V Chip C.
dC4	46854500	22000pF 50V Chip C.
dC5	46854900	47000pF 50V Chip C.
dC6	46854900	47000pF 50V Chip C.
dC7	46854900	47000pF 50V Chip C.
dC8	46849700	0.1μF 50V E.C.
dC9	46848300	4.7μF 25V E.C.
dC10	46854500	22000pF 50V Chip C.
dC11	46758300	100pF 50V Chip C.
dC12	46847600	10μF 50V Chip C.
dC13	46854500	22000pF 50V Chip C.
dC14	46854900	47000pF 50V Chip C.
dC15	46854900	47000pF 50V Chip C.
dC16	46854500	22000pF 50V Chip C.
dC17	46847600	10μF 16V E.C.
dC18	46847600	10μF 16V E.C.
dC19	46847000	22μF 10V E.C.
dC20	46794900	3300pF 50V Chip C.
dC21	46854700	33000pF 50V Chip C.
dC22	46847600	10μF 16V E.C.
dC23	46848200	100μF 16V E.C.
dC24	46847600	10μF 16V E.C.
dC25	46854900	47000pF 50V Chip C.
dC26	46849900	0.22μF 50V E.C.
dC27	46850300	1μF 50V E.C.
dC28	46849000	3.3μF 35V E.C.
dC29	46850300	1μF 50V E.C.
dC30	46854500	22000pF 50V Chip C.
dC31	46854600	27000pF 50V Chip C.
dC32	46847600	10μF 16V E.C.
dC33	46850300	1μF 50V E.C.
dC34	46661400	750pF 100V F.C.
dC35	46855900	270pF 50V Chip C.
dC36	46850300	1μF 50V E.C.
dL1	48148700	Inductor 22μH
dL2	46166600	Inductor 2.2μH
dT1	46836600	FM IF Coil
dVR1	46839300	1kΩ S.V.R., Auto Stop Level Adj.
dVR2	46839700	22kΩ S.V.R., Stereo Noise/High Cut Control
dVR3	46839600	10kΩ S.V.R., Separation Adj.
dVR4	46839800	47kΩ S.V.R., Pilot Canceller Adj.
dVR5	46838900	10kΩ S.V.R., VCO Adj.

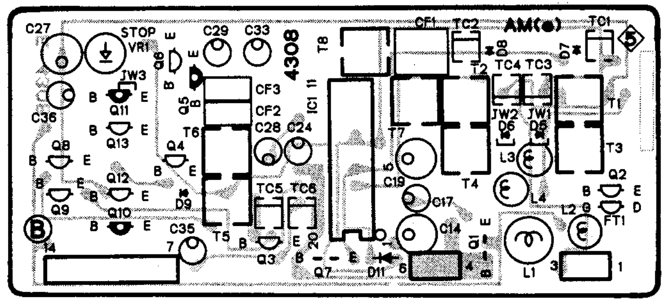
7. PARTS LOCATION & PARTS LIST

7-1. F-4308 AM Tuner Circuit Board (Stock No. 00770101)

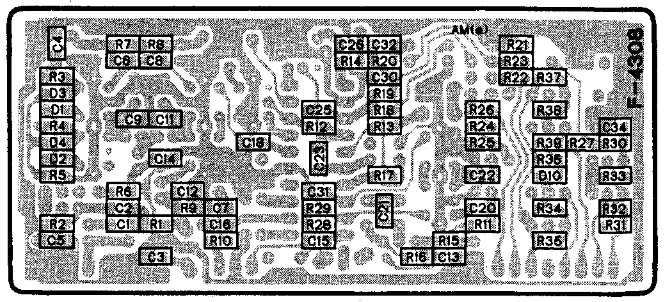
Top View (Component side) with Bottom Side Pattern


C27
STOP
VR1
C29
C33
4308
T8
CF1
TC2
AM(e)
TC1
TW3
Q11
Q13
Q12
Q10
Q8
Q9
Q4
T6
CF3
CF2
C28
C24
C36
D9
C35
T5
Q3
Q7
D11
IC1
T7
C19
C17
C14
T4
TC4
TC3
JW2
JW1
D6
D5
L3
T3
Q2
L2
FT1
L1
TC5
TC6
14
7
6
4
3
1

Top View (Component side) with Top Side Pattern


C27
STOP
VR1
C29
C33
4308
T8
CF1
TC2
AM(e)
TC1
TW3
Q11
Q13
Q12
Q10
Q8
Q9
Q4
T6
CF3
CF2
C28
C24
C36
D9
C35
T5
Q3
Q7
D11
IC1
T7
C19
C17
C14
T4
TC4
TC3
JW2
JW1
D6
D5
L3
T3
Q2
L2
FT1
L1
TC5
TC6
14
7
6
3
1

Chip Parts View with Bottom Side Pattern


F-4308
AM(e)
C4
R7
R8
C6
C8
R3
D3
D1
R4
D4
D2
R5
C9
C11
C14
C18
R6
C2
C1
R1
C12
R9
C7
C16
R10
R2
C5
C3
C26
C32
R14
R20
C30
R19
R18
R13
C25
R12
C23
R17
C31
R29
R28
C15
C27
R15
R16
C13
R21
R23
R22
R37
R26
R24
R25
C22
C20
R11
R38
R39
R27
R30
R36
D10
R34
R35
R32
R31
C34
R33

Parts List

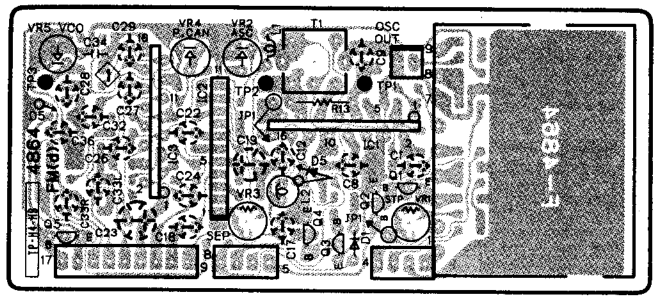
Parts No.	Stock No.	Description
•Transistor		
eQ1	46540801	2SC2878
	or 46604301	2SC3327
eQ2	46367301	2SC2458
eQ5	46367001	2SA1115
eQ6	46367101	2SC2603
	or 46367301	2SC2458
eQ7	46367101	2SC2603
	or 46367301	2SC2458
eQ8	46367101	2SC2603
	or 46367301	2SC2458
eQ9	46367301	2SC2458
•FET		
eFT1	46835200	2SK315-F
	or 46835201	2SK315-G
•IC		
eIC1	46669000	LA1135
•Diode		
eD1	46852000	RLS-73 Chip
eD3	46852000	RLS-73 Chip
eD7	46254600	1SV100
	or 46835100	1SV149
eD8	46254600	1SV100
	or 46835100	1SV149
eD9	46254600	1SV100
	or 46835100	1SV149
eD11	46421300	1N60PSP
eR1	46745200	100Ω 1/8W Chip R.
eR2	46752400	100kΩ 1/8W Chip R.
eR3	46744400	47Ω 1/8W Chip R.
eR5	46748400	2.2kΩ 1/8W Chip R.
eR7	46753200	220kΩ 1/8W Chip R.
eR8	46753200	220kΩ 1/8W Chip R.
eR10	46749200	4.7kΩ 1/8W Chip R.
eR11	46750800	22kΩ 1/8W Chip R.
eR12	46744400	47Ω 1/8W Chip R.
eR13	46744400	47Ω 1/8W Chip R.
eR14	46745200	100Ω 1/8W Chip R.
eR17	46750000	10kΩ 1/8W Chip R.
eR18	46750000	10kΩ 1/8W Chip R.
eR19	46748600	2.7kΩ 1/8W Chip R.
eR20	46749200	4.7kΩ 1/8W Chip R.
eR21	46749200	4.7kΩ 1/8W Chip R.
eR22	46750000	10kΩ 1/8W Chip R.
eR23	46750600	18kΩ 1/8W Chip R.
eR26	46751600	47kΩ 1/8W Chip R.
eR27	46749200	4.7kΩ 1/8W Chip R.
eR28	46749200	4.7kΩ 1/8W Chip R.
eR29	46748800	3.3kΩ 1/8W Chip R.
eR30	46751600	47kΩ 1/8W Chip R.
eR31	46751600	47kΩ 1/8W Chip R.
eR32	46750000	10kΩ 1/8W Chip R.
eR33	46745200	100Ω 1/8W Chip R.
eR40	46750000	10kΩ 1/8W Chip R.
eR41	46746400	330Ω 1/8W Chip R.
eC1	46854500	22000pF 50V Chip C.
eC2	46854500	22000pF 50V Chip C.
eC3	46854500	22000pF 50V Chip C.
eC4	46854900	47000pF 50V Chip C.
eC6	46854500	22000pF 50V Chip C.
eC7	46854500	22000pF 50V Chip C.
eC8	46854500	22000pF 50V Chip C.
eC10	46854900	47000pF 50V Chip C.
eC13	46854500	22000pF 50V Chip C.
eC14	46847400	100μF 10V E.C.
eC15	46795500	10000pF 50V Chip C.
eC16	46854500	22000pF 50V Chip C.
eC17	46850300	1μF 50V E.C.
eC18	46854500	22000pF 50V Chip C.
eC19	46716500	22μF 16V E.C
eC20	46856600	510pF 50V Chip C.
eC23	46854900	47000pF 50V Chip C.
eC24	46849000	3.3μF 35V E.C.
eC25	46795500	10000pF 50V Chip C.
eC26	46854500	22000pF 50V Chip C.
eC27	46716700	47μF 16V E.C.
eC28	46848300	4.7μF 25V E.C.
eC29	46849000	3.3μF 35V E.C.
eC30	46854700	33000pF 50V Chip C.
eC31	46854900	47000pF 50V Chip C.
eC32	46795500	10000pF 50V Chip C.
eC33	46849700	0.1μF 50V E.C.
eC34	46854500	22000pF 50V Chip C.
eC36	46847600	10μF 16V E.C.
eTC1	46613200	Trimmer Capacitor 20pF
eTC2	46613200	Trimmer Capacitor 20pF
eTC6	46613300	Trimmer Capacitor 30pF
eCF1	46724500	Ceramic Filter, SFP450H
eCF2	46578100	Ceramic Filter, BFU-450C10N
eCF3	46578100	Ceramic Filter, BFU-450C10N
eL1	46838300	Inductor 3.3mH

Parts List <F-4308>

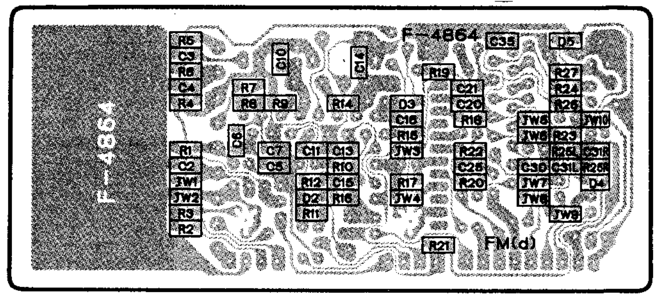
Parts No.	Stock No.	Description
eL2	46167600	Inductor 100μH
eL3	46166800	Inductor 4.7μH
eT1	46835300	MW RF Coil (1)
eT2	46835400	MW RF Coil (2)
eT5	46835500	MW RF Coil
eT7	46724300	AM IF Coil
eT8	46836000	AM IF Coil (2)
eVR1	46839400	2.2kΩ S.V.R., Auto Stop Level Adj.

7-2. F-4864 FM Circuit Board (Stock No. 00853908)

Top View (Component side) with Bottom Side Pattern


VR5 VCO
C34
C29
VR4
P.CAN
VR2
ASC
T1
OSC
OUT
TP2
TP1
JP1
C27
C22
C24
VR3
SEP
C23
C16
C17
Q3
D7
4864
17
9
8
5
4
1

Chip Parts View with Bottom Side Pattern

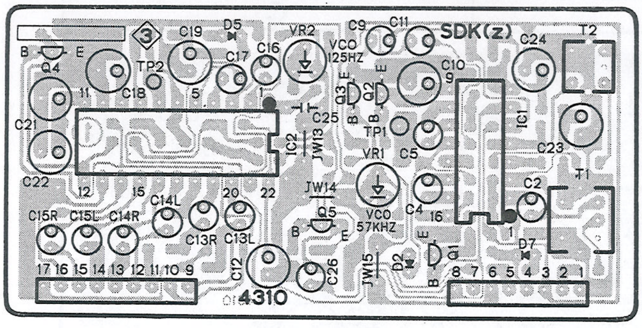

F-4864
F-4864
FM(d)
R5
C3
R6
C4
R4
C10
C14
C35
D5
R7
R8
R9
R14
R19
C21
R27
R24
R26
C16
R18
C18
D3
JW8
R23
R1
C2
JW1
JW2
R3
R2
C7
C5
C11
C13
R10
R12
C15
R11
JW3
R17
JW4
R16
D2
R22
R25
R20
C30
C31
C36
JW7
JW6
D4
R21

Parts List

Parts No.	Stock No.	Description
dZ1	48161200	FM Frontend ET-A041
•Transistor		
dQ1	46604301	2SC3327
dQ2	46719900	DTC124
dQ3	46604301	2SC3327
dQ4	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
dQ5	48171600	DTC114YS
•IC		
dIC1	46465000	LA1140
dIC2	48159600	NC3S300
dIC3	46465200	LA3375
•Diode		
dD1	46078000	1SS133
dD2	46852000	RLS-73 Chip
dD3	46852000	RLS-73 Chip
dD4	46852000	RLS-73 Chip
dD5	46852000	RLS-73 Chip
dD6	46078000	1SS133
dD7	03111600	1S2473
	or 03111800	1S1588
dJW1	46741100	Cross Conductor Chip
dR1	46747600	1kΩ 1/8W Chip R.
dR3	46746000	220Ω 1/8W Chip R.
dR4	46745000	10kΩ 1/8W Chip R.
dR5	46746600	390Ω 1/8W Chip R.
dR6	46742800	10Ω 1/8W Chip R.
dR7	46745600	150Ω 1/8W Chip R.
dR8	46745800	180Ω 1/8W Chip R.
dR9	46753200	220kΩ 1/8W Chip R.
dR10	46750800	22kΩ 1/8W Chip R.
dR11	46750000	10kΩ 1/8W Chip R.
dR12	46747600	1kΩ 1/8W Chip R.
dR14	46750200	12kΩ 1/8W Chip R.
dR15	45753200	220kΩ 1/8W Chip R.
dR16	46749200	4.7kΩ 1/8W Chip R.
dR17	46751600	47kΩ 1/8W Chip R.
dR18	46747600	1kΩ 1/8W Chip R.
dR19	46750800	22kΩ 1/8W Chip R.
dR20	46750000	10kΩ 1/8W Chip R.
dR21	46745200	100Ω 1/8W Chip R.
dR22	46748400	2.2kΩ 1/8W Chip R.
dR24	46747600	1kΩ 1/8W Chip R.
dR25	46748800	3.3kΩ 1/8W Chip R.
dR26	46752400	100kΩ 1/8W Chip R.
dR27	46750200	12kΩ 1/8W Chip R.
dR28	46747600	1kΩ 1/8W Chip R.
dC1	46849700	0.1μF 50V E.C.
dC2	46854500	22000pF 50V Chip C.
dC3	46794300	1000pF 50V Chip C.
dC4	46854500	22000pF 50V Chip C.
dC5	46854900	47000pF 50V Chip C.
dC6	46854900	47000pF 50V Chip C.
dC7	46854900	47000pF 50V Chip C.
dC8	46849700	0.1μF 50V E.C.
dC9	46848300	4.7μF 25V E.C.
dC10	46854500	22000pF 50V Chip C.
dC11	46758300	100pF 50V Chip C.
dC12	46847600	10μF 50V Chip C.
dC13	46854500	22000pF 50V Chip C.
dC14	46854900	47000pF 50V Chip C.
dC15	46854900	47000pF 50V Chip C.
dC16	46854500	22000pF 50V Chip C.
dC17	46847600	10μF 16V E.C.
dC18	46847600	10μF 16V E.C.
dC19	46847000	22μF 10V E.C.
dC20	46794900	3300pF 50V Chip C.
dC21	46854700	33000pF 50V Chip C.
dC22	46847600	10μF 16V E.C.
dC23	46848200	100μF 16V E.C.
dC24	46847600	10μF 16V E.C.
dC25	46854900	47000pF 50V Chip C.
dC26	46849900	0.22μF 50V E.C.
dC27	46850300	1μF 50V E.C.
dC28	46849000	3.3μF 35V E.C.
dC29	46850300	1μF 50V E.C.
dC30	46854500	22000pF 50V Chip C.
dC31	46854600	27000pF 50V Chip C.
dC32	46847600	10μF 16V E.C.
dC33	46850300	1μF 50V E.C.
dC34	46661400	750pF 100V F.C.
dC35	46855900	270pF 50V Chip C.
dC36	46850300	1μF 50V E.C.
dL1	48148700	Inductor 22μH
dL2	46166600	Inductor 2.2μH
dT1	46836600	FM IF Coil
dVR1	46839300	1kΩ S.V.R., Auto Stop Level Adj.
dVR2	46839700	22kΩ S.V.R., Stereo Noise/High Cut Control
dVR3	46839600	10kΩ S.V.R., Separation Adj.
dVR4	46839800	47kΩ S.V.R., Pilot Canceller Adj.
dVR5	46838900	10kΩ S.V.R., VCO Adj.

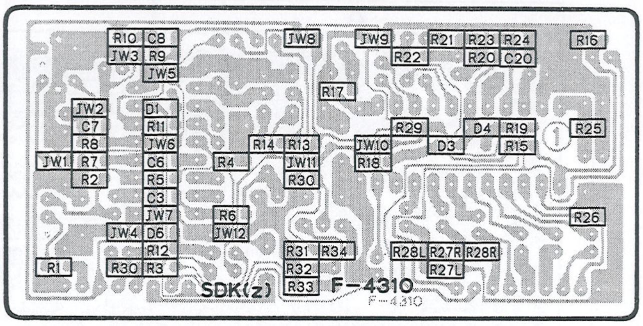
7-3. F-4310 Traffic Station Circuit Board (Stock No. 00772208)

Top View (Component side) with Bottom Side Pattern



③
B E
Q4
TP2
C19
D5
C17
C16
VR2
VCO 125HZ
C9
C11
SDK(z)
C24
T2
11
C18
5
1
Q3
Q2
B E
C10
9
C21
C22
IC2
JW13
C25
TP1
VR1
C5
IC1
C23
T1
12
15
20
22
C14L
JW14
Q5
VCO 57KHZ
C4
16
C2
C15R
C15L
C14R
C13R
C13L
Q1
D7
D2
JW15
C12
C26
17 16 15 14 13 12 11 10 9
8 7 6 5 4 3 2 1
4310

Chip Parts View with Bottom Side Pattern



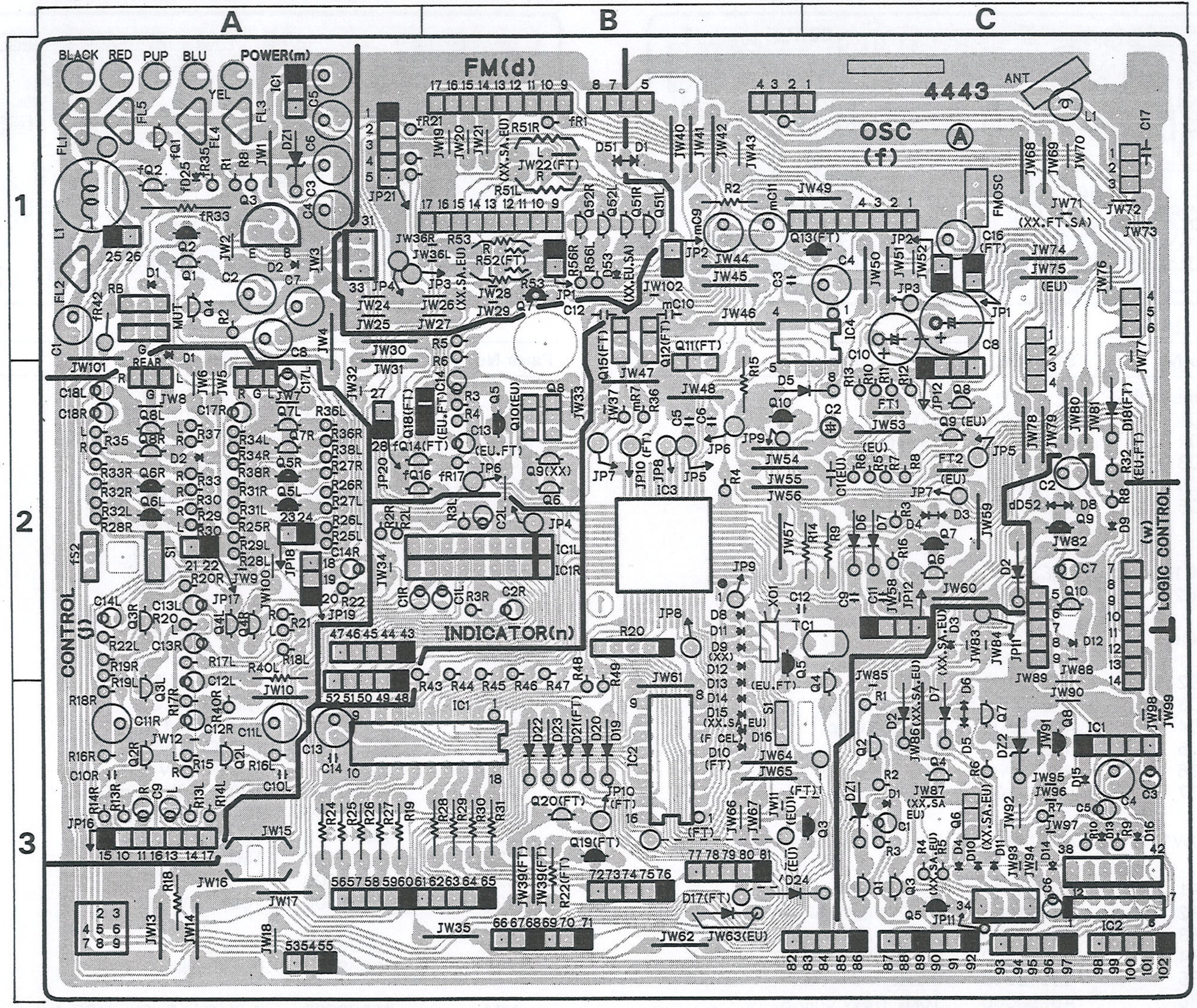
R10
C8
JW3
R9
JW5
JW8
JW9
R21
R23
R24
R16
R22
R20
C20
R17
JW2
C7
R8
JW1
R7
R2
D1
R11
JW6
C6
R5
C3
JW7
JW4
D6
R12
R1
R30
R3
R4
R14
R13
JW11
R30
R6
JW12
R31
R34
R32
R33
JW10
R18
R29
D3
D4
R19
R15
①
R25
R26
R28L
R27R
R28R
R27L
SDK(z)
F-4310
F-4310

Parts List

Parts No.	Stock No.	Description
•Transistor		
zQ1	46834300	DTC144
zQ2	46367101	2SC2603
zQ3	46834300	DTC144
zQ4	46834300	DTC144
zQ5	46367101	2SC2603
•IC		
zIC1	46836400	LA2200
zIC2	46836500	LA2211
•Diode		
zD1	46852000	RLS-73 (Chip)
zD2	46862100	1SS133
zD3	46852000	RLS-73 (Chip)
zD4	46852000	RLS-73 (Chip)
zD5	46862100	1SS133
zD6	46852000	RLS-73 (Chip)
zD7	46862100	1SS133
zJW1	46894800	Resistor Jumper (Chip)
zR1	46749200	4.7kΩ 1/8W chip R.
zR2	46751600	47kΩ 1/8W chip R.
zR3	46748600	2.7kΩ 1/8W chip R.
zR4	46748800	3.3kΩ 1/8W chip R.
zR5	46748800	3.3kΩ 1/8W chip R.
zR6	46750000	10kΩ 1/8W chip R.
zR7	46747600	1kΩ 1/8W chip R.
zR8	46749600	6.8kΩ 1/8W chip R.
zR9	46748800	3.3kΩ 1/8W chip R.
zR10	46746000	220Ω 1/8W chip R.
zR11	46746800	470Ω 1/8W chip R.
zR12	46750000	10kΩ 1/8W chip R.
zR13	46750000	10kΩ 1/8W chip R.
zR14	46749200	4.7kΩ 1/8W chip R.
zR15	46750000	10kΩ 1/8W chip R.
zR16	46748000	1.5kΩ 1/8W chip R.
zR17	46749600	6.8kΩ 1/8W chip R.
zR18	46748400	2.2kΩ 1/8W chip R.
zR19	46750000	10kΩ 1/8W chip R.
zR20	46748400	2.2kΩ 1/8W chip R.
zR21	46747600	1kΩ 1/8W chip R.
zR22	46754800	1MΩ 1/8W chip R.
zR23	46753000	180kΩ 1/8W chip R.
zR24	46754600	820kΩ 1/8W chip R.
zR25	46750000	10kΩ 1/8W chip R.
zR26	46747600	1kΩ 1/8W chip R.
zR27	46750000	10kΩ 1/8W chip R.
zR28	46750400	15kΩ 1/8W chip R.
zR29	46743600	22Ω 1/8W chip R.
zR30	46750000	10kΩ 1/8W chip R.
zR31	46752400	100kΩ 1/8W chip R.
zR32	46747600	1kΩ 1/8W chip R.
zR33	46752400	100kΩ 1/8W chip R.
zR34	46747600	1kΩ 1/8W chip R.
zR35	46752400	100kΩ 1/8W chip R.
zC2	46716100	4.7μF 16V E.C.
zC3	46856200	360pF 50V chip C.
zC4	46718200	0.1μF 50V E.C.
zC5	46716800	3.3μF 50V E.C.
zC6	46794700	2200pF 50V chip C.
zC7	46854900	47000pF 50V chip C.
zC8	46778900	220pF 50V chip C.
zC9	46716100	4.7μF 16V E.C.
zC10	46847400	100μF 16V E.C.
zC11	46716100	4.7μF 16V E.C.
zC12	46848200	100μF 16V E.C.
zC13	46716100	4.7μF 16V E.C.
zC14	46716100	4.7μF 16V E.C.
zC15	46716100	4.7μF 16V E.C.
zC16	46718800	1μF 50V E.C.
zC17	46716300	10μF 16V E.C.
zC18	46715300	100μF 6.3V E.C.
zC19	46715300	100μF 6.3V E.C.
zC20	46778100	100pF 50V chip C.
zC21	46847400	100μF 10V E.C.
zC22	46847400	100μF 10V E.C.
zC23	46847400	100μF 10V E.C.
zC25	46673200	0.22μF 63V F.C.
zC26	46715500	10μF 10V E.C.
zT1	46836700	Filter
zT2	46853700	FM IF Coil
zVR1	46838800	4.7k S.V.R. PLL VCO Adj.
zVR2	46838800	4.7k S.V.R. PLL VCO Adj.

7-4. F-4443 Main Circuit Board (Stock No. 00780408)

Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
dQ51	46719900	DTC124
dQ52	46367101	2SC2603
	or 46367301	2SC2458
dQ53	46719800	DAT124
fQ1	46719900	DTC124
fQ2	46859201	2SD1225M
fQ3	46719800	DTA124
fQ4	46719900	DTC124
fQ5	46719800	DTA124
fQ6	46719900	DTC124
fQ7	46719800	DTA124
fQ8	46367101	2SC2603
fQ10	46834200	DTA144
fQ11	46614600	DTC124
fQ12	46614600	DTC124
fQ13	46834200	DTA144
fQ14	46834300	DTC144
fQ15	46614600	DTC124
fQ16	46719900	DTC124
fQ18	46925500	DTA124
fQ19	46719800	DTA124
fQ20	46719900	DTC124
•FET		
fFT1	46643501	2SK163-K2
	or 46643502	2SK163-L1
	or 46643503	2SK163-L2

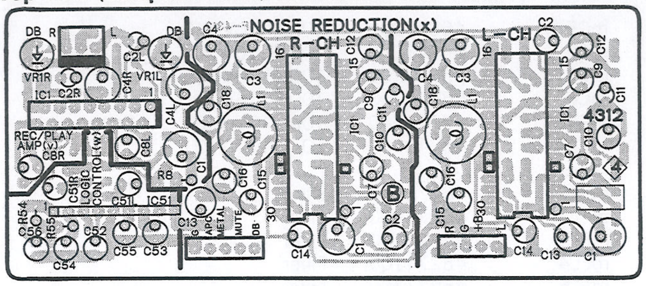
Parts No.	Stock No.	Description
•IC		
fIC1	46730300	M54563P
fIC2	46730200	M54531P
	or 46911900	IR2411
fIC3	46610800	μPD1710G-013
fIC4	46253400	μPB553AC
fX1	46253600	Quartz Element 4.5MHz
	or 46253601	Quartz Element 4.5MHz
•Diode		
fD1	46463800	MC911
fD2	03117600	1S2473T77
fD3	46464000	MC921
fD5	03117600	1S2473T77
fD6	03117600	1S2473T77
fD7	03117600	1S2473T77
fD8	46862100	1SS133
fD10	46862100	1SS133
fD11	46862100	1SS133
fD12	46862100	1SS133
fD13	46862100	1SS133
fD14	46862100	1SS133
fD16	46862100	1SS133
fD17	03117600	1S2473T77
fD18	03117600	1S2473T77
fD19	03117600	1S2473T77
fD20	03117600	1S2473T77

Parts List <F-4443>

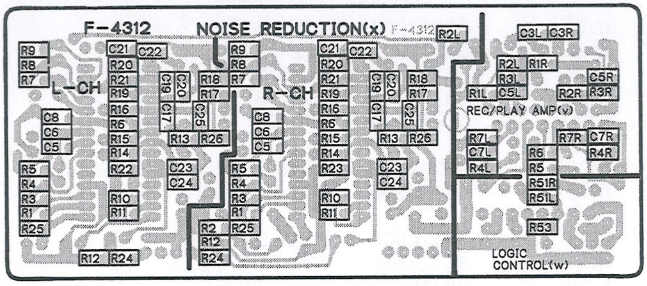
Parts No.	Stock No.	Description
fD21	03117600	1S2473D
fD22	03117600	1S2473T77
fD23	03177600	1S2473T77
fD24	03117600	1S2473T77
fD25	46862100	1SS133
fR20	46342300	22kΩ×4 1/8W A.R.
fR33	46623500	22Ω 2W N.I.R.
fC2	48124600	2.2μF 50V E.B.
fC4	46715300	100μF 6.3V E.C.
fC13	46716700	47μF 16V E.C.
fC16	46848200	100μF 16V E.C.
fTC1	46444600	Trimmer Capacitor 30pF
fL1	48076500	220k Inductor
fS2	46394000	Slide SW., Ilumination
•Transistor		
jQ2	46367101	2SC2603
jQ3	46367101	2SC2603
	or 46367301	2SC2458
jQ4	46367101	2SC2603
jQ5	46367001	2SA1115
jQ6	46367001	2SA1115
jQ7	46367101	2SC2603
	or 46367301	2SC2458
jQ8	46367101	2SC2603
	or 46367301	2SC2458
•Diode		
jD1	46862100	1SS133
jD2	46862100	1SS133
jC9	46718800	1μF 50V E.C.
jC11	46848200	100μF 16V E.C.
jC12	46713600	3.3μF 50V E.C.
jC13	46713300	1μF 50V E.C.
jC14	46715500	10μF 10V E.C.
jC17	46710600	4.7μF 16V E.C.
	or 46716100	4.7μF 16V E.C.
jC18	46716100	4.7μF 16V E.C.
jS1	46394000	Slide SW., Output Level
•Transistor		
mQ1	46719900	DTC124
mQ2	46719800	DTA124
mQ3	03083901	2SD313
mQ4	46367101	2SC2603
	or 46367301	2SC2458
mQ5	46367001	2SA1115
	or 46367201	2SA1048
mQ6	46834300	DTC144
mQ7	46367001	2SA1115
	or 46367201	2SA1048
mQ8	46614600	DTC124
•IC		
mIC1	46359400	L78N05
•Diode		
mD1	46862100	1SS133
mD2	46862100	1SS133
•Zener Diode		
mDZ1	46113300	05Z10-Y
mC1	46848200	100μF 16V E.C.
mC2	46716600	33μF 16V E.C.
mC3	46848200	100μF 16V E.C.
mC4	46848200	100μF 16V E.C.
mC5	46848200	100μF 16V E.C.
mC6	46848200	100μF 16V E.C.
mC7	46848200	100μF 16V E.C.
mC8	46848200	100μF 16V E.C.
mC13	46715500	10μF 10V E.C.
mC14	46710000	10μF 10V E.C.
mFL1	46271100	Filter
mFL2	46271100	Filter
mFL3	46271100	Filter
mFL4	46271100	Filter
mFL5	46271100	Filter
mL1	46273800	Filter Coil 50μH
•IC		
nIC1	46898100	BA6144
nC1	46717500	2.2μF 35V E.C.
nC2	46716300	10μF 16V E.C.
•Transistor		
wQ1	46134201	2SD1111
wQ2	46719900	DTC124
wQ3	46719900	DTC124
wQ4	46719900	DTC124
wQ5	46719800	DTA124
wQ7	46719900	DTC124
wQ8	46719800	DTA124
wQ9	46719800	DTA124
wQ10	46719900	DTC124
•IC		
wIC1	46273100	BA634
wIC2	46933800	DT5C114E
•Diode		
wD1	46862100	1SS133
wD2	03117600	1S2473T77
wD4	46862100	1SS133
wD6	46463800	MC911
wD7	03117600	1S2473T77
wD8	46463800	MC911
wD9	46862100	1SS133
wD10	46862100	1SS133
wD11	46862100	1SS133
wD12	46862100	1SS133
wD13	46862100	1SS133
wD14	46862100	1SS133
wD15	46862100	1SS133
wD16	46862100	1SS133
wD17	46078000	1SS133
wD18	46078000	1SS133
wD19	46078000	1SS133
wD20	46078000	1SS133
•Zener Diode		
wDZ1	46108800	05Z2.4-X
wDZ2	46112900	05Z9.1-X
	or 46113000	05Z9.1-Y
wC1	46718800	1μF 50V E.C.
wC2	46711100	33μF 16V E.C.
wC3	46718800	1μF 50V E.C.
wC4	46848200	100μF 16V E.C.
wC5	46712700	0.1μF 50V E.C.
wC6	46716300	10μF 16V E.C.
wC7	46713300	1μF 50V E.C.
wC8	46713100	0.47μF 50V E.C.

7-5. F-4312 Dolby Noise Reduction Circuit Board (Stock No. 00780201)

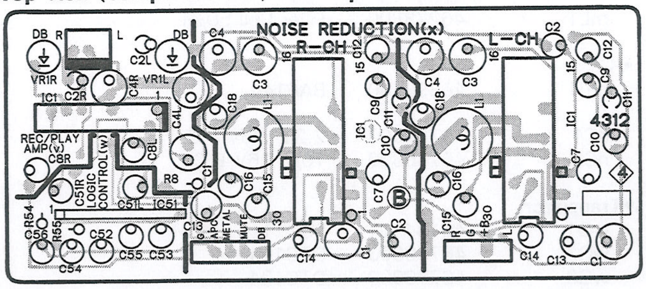
Top View (Component side) with Bottom Side Pattern


NOISE REDUCTION(x)
R-CH
L-CH
DB
VR1R
VR1L
IC1
C2R
C2L
C4R
C4L
REC/PLAY AMP(v)
C8R
C8L
C51R
LOGIC CONTROL(w)
C51L
IC51
R8
R54
R55
C56
C52
C55
C53
C54
C13
G
APC
METAL
MUTE
DB
30
C14
C1
C2
C3
C4
C7
C9
C10
C11
C12
C15
C16
C18
L1
R
G
+B30
L
4312
B
4

Chip Parts View with Bottom Side Pattern


F-4312
NOISE REDUCTION(x)
L-CH
R-CH
R2L
C3L
C3R
R2L
R1R
R3L
C5R
R1L
C5L
R2R
R3R
REC/PLAY AMP(v)
R7L
R7R
C7R
C7L
R6
R4R
R4L
R5
R51R
R51L
R53
LOGIC CONTROL(w)
R9
R8
R7
C21
C22
R20
R21
R19
R18
R17
C19
C20
C17
C25
R16
R6
R15
R14
R13
R26
C8
C6
C5
R22
C23
C24
R23
R5
R4
R3
R1
R10
R11
R2
R12
R25
R24

Top View (Component side) with Top Side Pattern

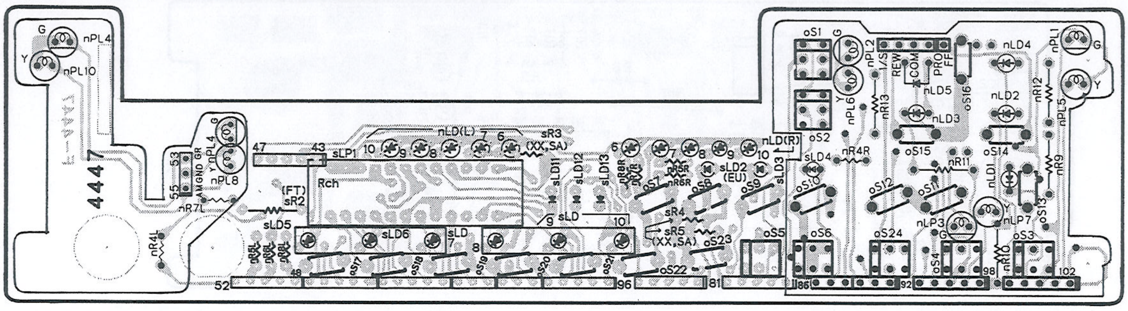

NOISE REDUCTION(x)
R-CH
L-CH
DB
VR1R
VR1L
IC1
C2R
C2L
C4R
C4L
REC/PLAY AMP(v)
C8R
C8L
C51R
LOGIC CONTROL(w)
C51L
IC51
R8
R54
R55
C56
C52
C55
C53
C54
C13
G
APC
METAL
MUTE
DB
30
C14
C1
C2
C3
C4
C7
C9
C10
C11
C12
C15
C16
C18
L1
R
G
+B30
4312
B
4

Parts List

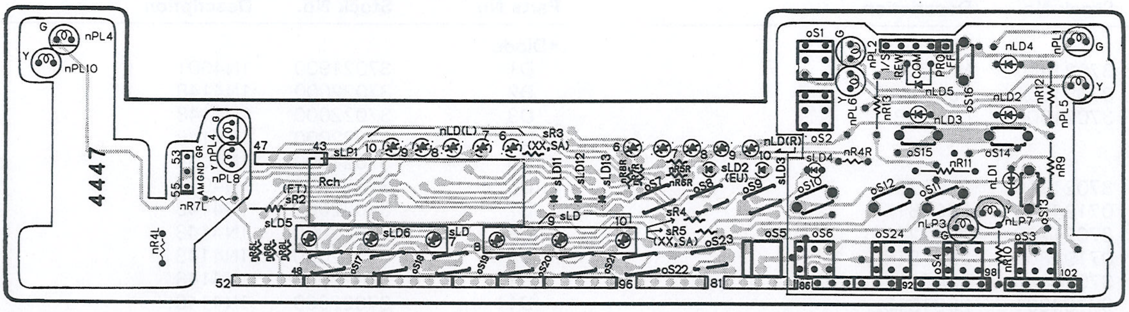
Parts No.	Stock No.	Description
•IC		
vIC1	46837200	BA3406L
•Diode		
vR1	46852000	RLS-73 Chip
vR2	46852000	RLS-73 Chip
vR1	46742800	10Ω 1/8W Chip R.
vR2	46749200	4.7kΩ 1/8W Chip R.
vR3	46752400	100kΩ 1/8W Chip R.
vR4	46749200	4.7kΩ 1/8W Chip R.
vR5	46750000	10kΩ 1/8W Chip R.
vR6	46750000	10kΩ 1/8W Chip R.
vR7	46754800	1MΩ 1/8W Chiop R.
vC1	46716700	47µF 16V E.C.
vC2	46849100	4.7µF 35V E.C.
vC3	46856900	680pF 50V Chip C.
vC4	46715300	100µF 6.3V E.C.
vC5	46854700	33000pF 50V Chip C.
vC7	46854500	22000pF 50V Chip C.
vC8	46847600	10µF 16V E.C.
vVR1	46839000	100Ω S.V.R., Dolby level Adj.
•IC		
wIC51	46270700	BA338
wR51	46750200	12kΩ 1/8W Chip R.
wR53	46748600	2.7kΩ 1/8W Chip R.
wC51	46850100	0.47µF 50V E.C.
wC52	46716300	10µF 16V E.C.
wC53	46716100	4.7µF 16V E.C.
wC54	46718200	0.1µF 50V E.C.
wC55	46716300	10µF 16V E.C.
wC56	46717500	2.2µF 35V E.C.
•IC		
xIC1	46671900	HA12058NT
xR1	46749400	5.6kΩ 1/8W Chip R.
xR2	46751200	33kΩ 1/8W Chip R.
xR3	46749800	8.2kΩ 1/8 Chip R.
xR4	46748800	3.3kΩ 1/8W Chip R.
xR5	46750900	24kΩ 1/8W Chip R.
xR6	46749500	6.2kΩ 1/8W Chip R.
xR7	46752200	82kΩ 1/8W Chip R.
xR8	46754800	1MΩ 1/8W Chip R.
xR9	46754800	1MΩ 1/8W Chip R.
xR10	46751200	33kΩ 1/8W Chip R.
xR11	46750000	10kΩ 1/8W Chip R.
xR12	46749300	5.1kΩ 1/8W Chip R.
xR13	46747600	1kΩ 1/8W Chip R.
xR14	46748800	3.3kΩ 1/8W Chip R.
xR15	46752200	82kΩ 1/8W Chip R.
xR16	46749500	6.2kΩ 1/8W Chip R.
xR17	46751600	47kΩ 1/8W Chip R.
xR18	46746800	470Ω 1/8W Chip R.
xR19	46749200	4.7kΩ 1/8W Chip R.
xR20	46752000	68kΩ 1/8W Chip R.
xR21	46750000	10kΩ 1/8W Chip R.
xR22	46748400	2.2kΩ 1/8W Chip R.
xR23	46748600	2.7kΩ 1/8W Chip R.
xR24	46747600	1kΩ 1/8W Chip R.
xR25	46749800	8.2kΩ 1/8W Chip R.
xR26	46749800	8.2kΩ 1/8W Chip R.
xC1	46716700	47µF 16V E.C.
xC2	46718800	1µF 50V E.C.
xC3	46715300	100µF 6.3V E.C.
xC4	46715300	100µF 6.3V E.C.
xC5	46854700	33000pF 50V Chip C.
xC6	46795500	10000pF 50V Chip C.
xC7	46848300	4.7µF 25V E.C.
xC8	46854400	18000pF 50V Chip C.
xC9	46850000	0.33µF 50V E.C.
xC10	46849800	0.15µF 50V E.C.
xC11	46718600	0.47µF 50V E.C.
xC12	46850200	0.68µF 50V E.C.
xC13	46716500	22µF 16V E.C.
xC14	46716300	10µF 16V E.C.
xC15	46850100	0.47µF 50V E.C.
xC16	46849800	0.15µF 50V E.C.
xC18	46848300	4.7µF 25V E.C.
xC19	46795400	8200pF 50V Chip C.
xC20	46795100	4700pF 50V Chip C.
xC21	46795200	5600pF 50V Chip C.
xC22	46757300	39pF 50V Chip C.
xC23	46794300	1000pF 50V Chip C.
xC24	46794300	1000pF 50V Chip C.
xC25	46854600	27000pF 50V Chip C.
xL1	46921700	Inductor

7-6. F-4447 Digitally Display Circuit Board

Top View (Component side) with Bottom Side Pattern


4447
nPL4
nPL10
nPL8
nR7L
nR4L
sR2
sLD5
sLP1
Rch
nLD(L)
sR3
(XX,SA)
sLD11
sLD12
sLD13
sLD6
sLD
sR4
sR5
(XX,SA)
sLD2
(EU)
sLD3
nLD(R)
sLD4
nR4R
oS1
oS2
nPL2
nPL6
nPL3
nLD4
nLD5
nLD3
nLD2
nLD1
nR11
nR12
nR13
nR9
nR10
nPL1
nPL5
nLP3
nLP7
oS3
oS4
oS5
oS6
oS7
oS8
oS9
oS10
oS11
oS12
oS13
oS14
oS15
oS16
oS17
oS18
oS19
oS20
oS21
oS22
oS23
oS24
47
43
48
52
53
55
81
86
92
96
98
102

Top View (Component side) with Top Side Pattern

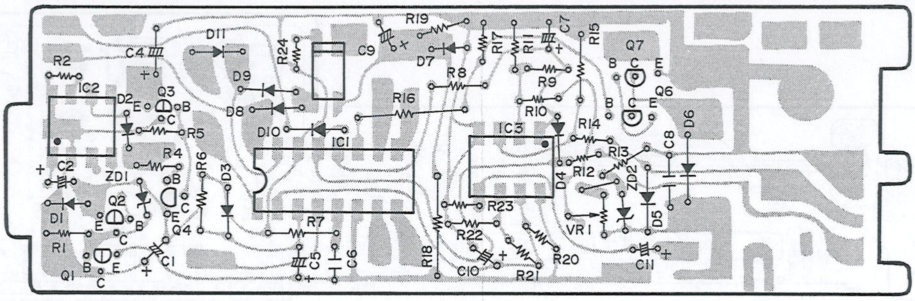

4447
nPL4
nPL10
nPL8
nR7L
nR4L
sR2
sLD5
sLP1
Rch
nLD(L)
sR3
(XX,SA)
sLD11
sLD12
sLD13
sLD6
sLD
sR4
sR5
(XX,SA)
sLD2
(EU)
sLD3
nLD(R)
sLD4
nR4R
oS1
oS2
nPL2
nPL6
nLD4
nLD5
nLD3
nLD2
nLD1
nR11
nR12
nR13
nR9
nR10
nPL1
nPL5
nLP3
nLP7
oS3
oS4
oS5
oS6
oS7
oS8
oS9
oS10
oS11
oS12
oS13
oS14
oS15
oS16
oS17
oS18
oS19
oS20
oS21
oS22
oS23
oS24
47
43
48
52
53
55
81
86
92
96
98
102

Parts List

Parts No.	Stock No.	Description
•LED		
nLD1	46858400	GL-1HY201
nLD2	46858300	GL-1HD201
nLD3	46858300	GL-1HD201
nLD4	46858300	GL-1HD201
nLD5	46858300	GL-1HD201
nLD6	46858300	GL-1HD201
nLD7	46858300	GL-1HD201
nLD8	46858300	GL-1HD201
nLD9	46858300	GL-1HD201
nLD10	46858300	GL-1HD201
nPL1	46858600	Pilot Lamp 14V 0.05A
nPL2	46858600	Pilot Lamp 14V 0.05A
nPL3	46858600	Pilot Lamp 14V 0.05A
nPL4	46858600	Pilot Lamp 14V 0.05A
nPL5	46941200	Pilot Lamp 14V 0.05A
nPL6	46941200	Pilot Lamp 14V 0.05A
nPL7	46941200	Pilot Lamp 14V 0.05A
nPL8	46941200	Pilot Lamp 14V 0.05A
nPL9	46858600	Pilot Lamp 14V 0.05A
nPL10	46941200	Pilot Lamp 14V 0.05A
oS1	46500000	Push SW., dolby OFF/ON
oS2	46500000	Push SW., dolby B/C
oS3	46500000	Push SW., METAL
oS4	46500000	Push SW., AMPS
oS5	46500000	Push SW., MONO
oS6	46500000	Push SW., LOC
oS7	46858200	Push SW., ME
oS8	46858200	Push SW., SDK
oS9	46858200	Push SW., AM
oS10	46858200	Push SW., FM
oS11	46858200	Push SW., TUNE/SEEK ◄
oS12	46858200	Push SW., TUNE/SEEK ►
oS13	46858200	Push SW., PAUSE
oS14	46858200	Push SW., ►►
oS15	46858200	Push SW., ◄◄
oS16	46858200	Push SW., ◄ PROGRAM ►
oS17	46858200	Push SW., preset station (1)
oS18	46858200	Push SW., preset station (2)
oS19	46858200	Push SW., preset station (3)
oS20	46858200	Push SW., preset station (4)
oS21	46858200	Push SW., preset station (5)
oS22	46858200	Push SW., preset station (6)
oS23	46858200	Push SW., P. SCAN
oS24	46858100	Push SW., INTRO SCAN
•LED		
sLD3	07251000	TLY-123
sLD4	07251000	TLY-123
sLD5	46858400	GL-IHY201
sLD6	46858400	GL-IHY201
sLD7	46858400	GL-IHY201
sLD8	46858400	GL-IHY201
sLD9	46858400	GL-IHY201
sLD10	46858400	GL-IHY201
sLD11	07251000	TLY-123
sLD12	07251000	TLY-123
sLD13	07251000	TLY-123
sPL1	46841900	LED Ass'y

7-7. S-15H-02 Mechanism Control Circuit Board (Stock No. 37021300)

Component Side


R19
R2
IC2
C4
D11
R24
C9
D7
R17
R11
C7
R15
Q7
R8
R9
Q6
D9
D8
R16
R10
D6
D2
Q3
R5
D10
IC1
IC3
R14
C8
R4
R13
R12
ZD2
D4
C2
ZD1
R6
D3
Q2
Q4
R23
VR1
D5
D1
R7
R22
C6
C5
R18
C10
R21
R20
C11
R1
C1
Q1

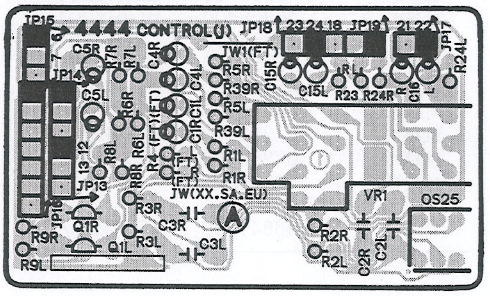
Parts List

Parts No.	Stock No.	Description
•IC		
IC1	37021400	M18523
IC2	37021600	TL7705CP
IC3	37021500	LM393P
•Transistor		
Q1	37021700	2SC2236
Q2	07194801	2SC1815
Q3	37021700	2SC2236
Q4	07194801	2SC1815
Q5	37021800	2SD635
Q6	07194801	2SC1815
Q7	37021700	2SC2236
•Photo Transistor		
	37022100	TLP521-1
	46168800	Magnetic Element DM-106A

Parts No.	Stock No.	Description
•Diode		
D1	37021900	1N4001
D2	37022000	1N4148
D3	37022000	1N4148
D4	37022000	1N4148
D5	37021900	1N4001
D6	37021900	1N4001
D7	37022000	1N4148
D8	37022000	1N4148
D9	37022000	1N4148
D10	37022000	1N4148
D11	37022000	1N4148
D12	37022000	1N4148
•Zener Diode		
zD1	46103000	05Z10Y
zD2	46101600	05Z6.2Y

7-8. F-4444 VOLUME/BAL/FADER Circuit Board

Component Side

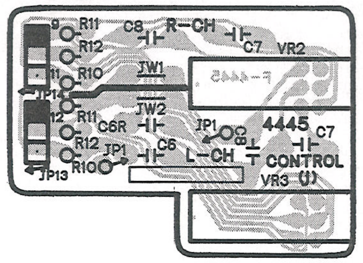

JP15
4444 CONTROL(J)
JP18
23 24 18
JP19
21 22
JP17
R24L
7
6
C5R
R7R
C4R
TW1(FT)
R5R
C15R
C15L
R23
R24R
C16
JP14
C5L
R39R
R5L
C6R
R6R
CIRC1L
C4L
R39L
13 12
R8L
R6L
R1L
R1R
R8R
R4
(FT)
JW(XX.SA.EU)
VR1
OS25
JP13
JP16
R3R
C3R
A
R9R
Q1R
Q1L
R3L
C3L
R2R
C2R
C2L
R2L
R9L

Parts List

Parts No.	Stock No.	Description
•Transistor		
jQ1	46367101	2SC2603
jC1	46713700	4.7μF 50V E.C.
jC2	46282000	1500pF 50V F.C.
jC3	46283500	0.033μF 50V F.C.
jC4	46718800	1μF 50V E.C.
jC5	46716300	10μF 16V E.C.
jC15	46718800	1μF 50V E.C.
jC16	46718800	1μF 50V E.C.
jVR1	46859800	50kΩ(B)×2 V.R., VOLUME/power ON, OFF and 150kΩ(W) V.R., BAL and 150kΩ(W)×2 V.R., FADER
oS25	46866600	Push SW., LOUDNESS

7-9. F-4445 Tone Control Circuit Board

Component Side

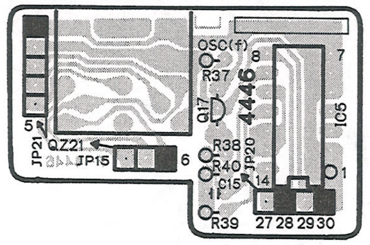

9
R11
R12
R10
11
JP14
12
R11
R12
R10
JP13
C8
R-CH
C7
VR2
JW1
JW2
C6R
JP1
C6
L-CH
JP1
C8
4445
C7
CONTROL
VR3 (J)

Parts List

Parts No.	Stock No.	Description
jC6	46282700	6800pF 50V F.C.
jC7	46283700	0.047μF 50V F.C.
jC8	46283700	0.047μF 50V F.C.
jVR2	46852100	50kΩ(B)×2 V.R., BASS
jVR3	46852100	50kΩ(B)×2 V.R., TREBLE

7-10. F-4446 DIN Jack (LINE IN/OUT) Circuit Board

Component Side


OSC(f)
8
7
R37
4446
Q17
IC5
5
JP21
QZ21
JP15
6
R38
R40
JP20
1
C15
14
R39
27 28 29 30

Parts List

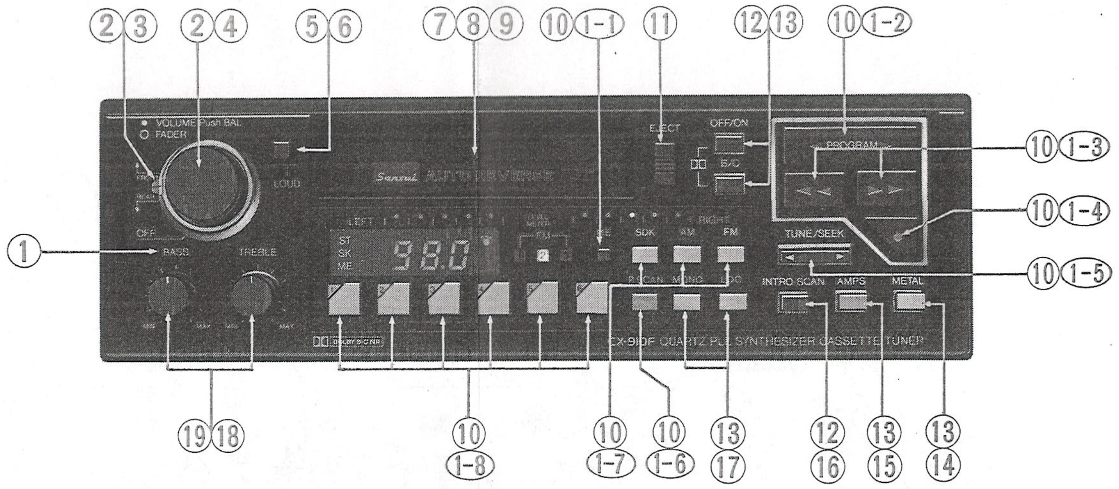
Parts No.	Stock No.	Description
•Transistor		
fQ17	46367101	2SC2603
•IC		
fIC5	46427200 or 46631900	μPD4011BC M4011BP
fZ1	07244900	Buzzer PKM12
	46852400	DIN Jack, LINE IN/OUT

8. OTHER PARTS

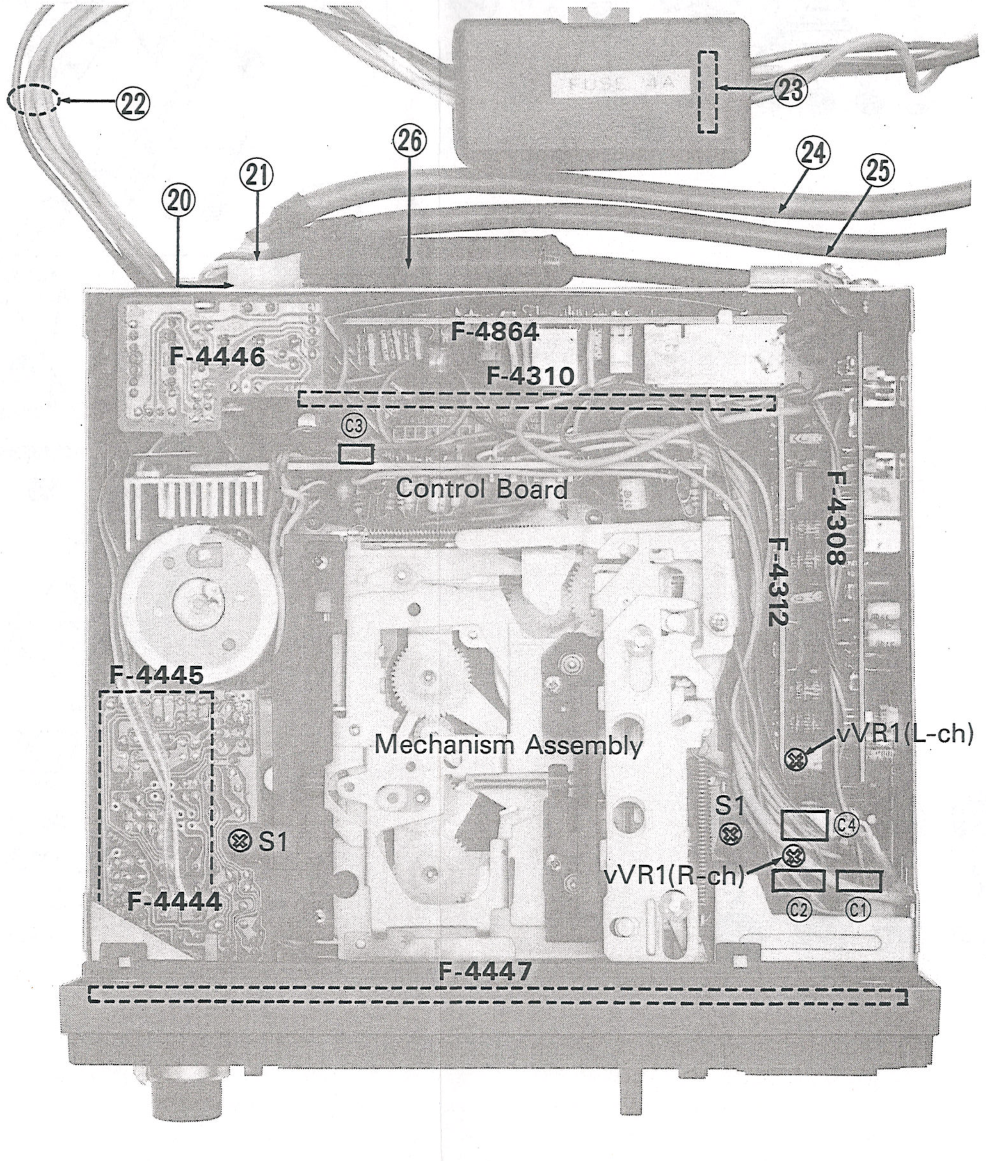
Parts List <Front View/Top View>

Parts No.	Stock No.	Description
1	47469600	Front Panel Ass'y
1-1	———	Push Knob, ME
1-2	———	PROGRAM Knob
1-3	———	Push Knob, ►►, ◄◄
1-4	———	TUNER Knob
1-5	———	Push Knob, TUNE/SEEK
1-6	———	Push Knob, P. SCAN
1-7	———	Push Knob, DISP, AM, FM
1-8	———	Push Knob, preset station 1 ~ 6
2	46859800	50kΩ(B)×2 V.R., VOLUME/power ON/OFF and 150kΩ(W) V.R., BAL and 100kΩ(W)×2 V.R., FADER
3	47344800	Knob, FADER
4	47344600	Knob, VOLUME/Push BAL
5	46866600	Push SW., LOUD
6	47356700	Push Knob, LOUD
7	47442400	Cassette Door
8	47485000	Shaft, cassette door
9	07907500	Spring, cassette door
10	46858200	Push SW., ME, PAUSE, FM etc.,
11	47395600	EJECT Knob
12	47463500	Push Knob, dolby ON/OFF, B/C, INTRO SCAN
13	46500000	Push SW., dolby ON/OFF, B/C
14	47463600	Push Knob, METAL
15	47463700	Push Knob, AMPS
16	46858100	Push SW., INTRO SCAN
17	47347300	Push Knob, MONO, LOC
18	46852100	50kΩ(B)×2 V.R., BASS, TREBLE
19	47471800	Knob, BASS, TREBLE
20	46852400	DIN Jack, LINE IN/OUT
21	46610100	Short Plug
22	46865600	Power Supply Cord with Connector
23	48000100	Power Fuse 4A
24	46911700	Pre Out Plug Cord, REAR
25	46852700	Pre Out Plug Cord, FRONT
26	46853510	Antenna Cord with Socket

8-1. Front View

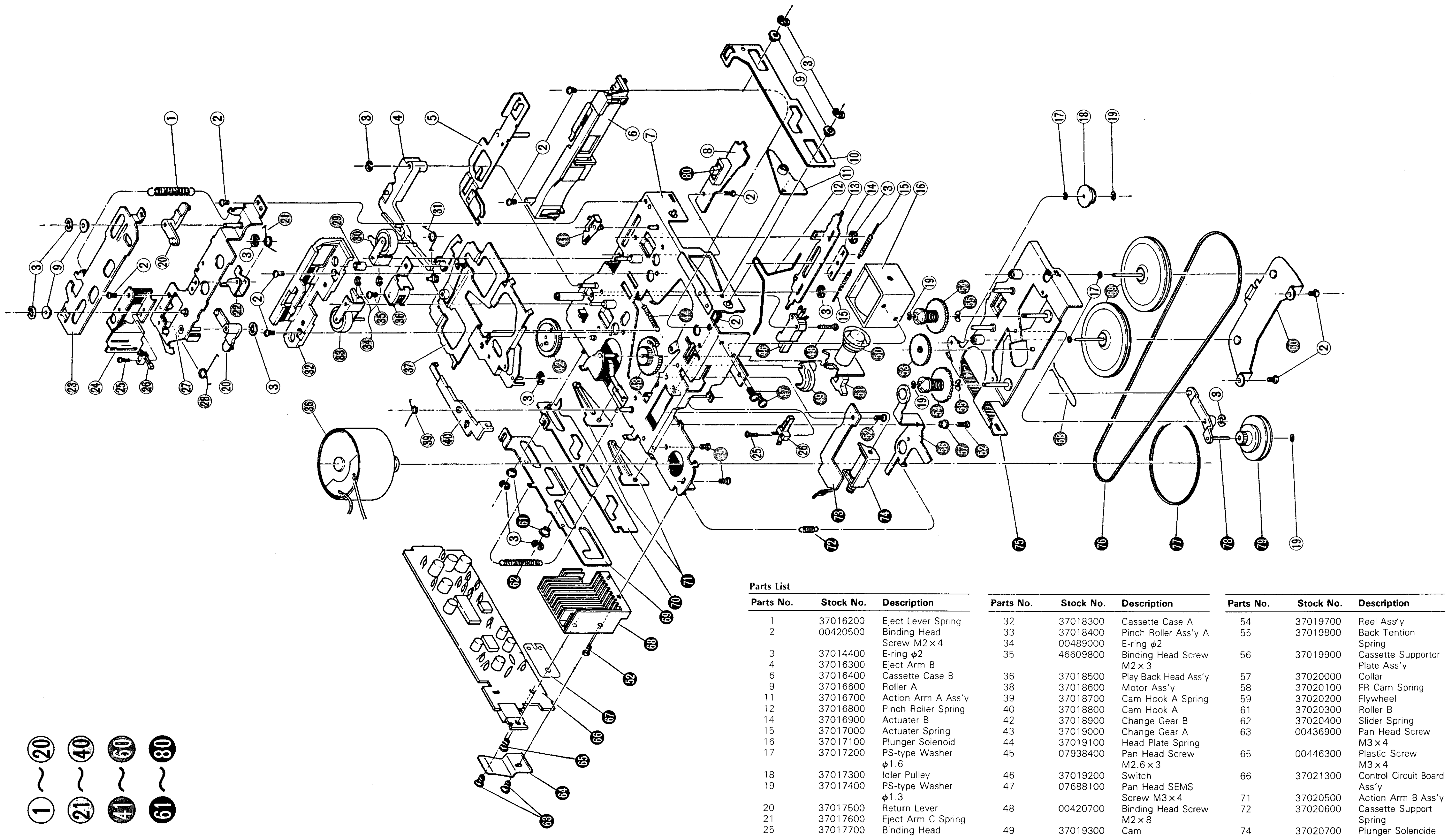

②③
②④
⑤⑥
⑦⑧⑨
⑩(1-1)
⑪
⑫⑬
⑩(1-2)
⑩(1-3)
⑩(1-4)
①
⑩(1-5)
⑲⑱
⑩ (1-8)
⑩ (1-7)
⑩ (1-6)
⑬ ⑰
⑫ ⑯
⑬ ⑮
⑬ ⑭

8-2. Top View


㉒
㉓
㉖
㉔
㉕
㉑
⑳
F-4446
F-4864
F-4310
C3
Control Board
F-4308
F-4312
F-4445
Mechanism Assembly
vVR1(L-ch)
S1
S1
C4
vVR1(R-ch)
C2
C1
F-4444
F-4447

9. EXPLODED VIEW & PARTS LIST OF MECHANISM ASS'Y

- **Though every part included in mechanism ass'y is numbered in exploded view, parts unlisted in the parts list are not supplied.**



Parts List

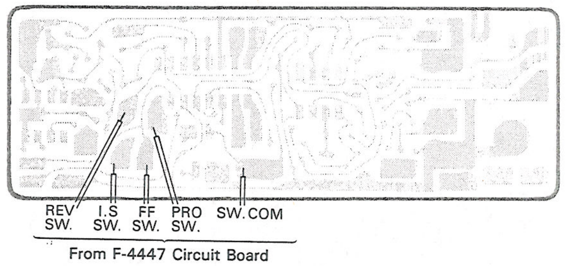
Parts No.	Stock No.	Description
1	37016200	Eject Lever Spring
2	00420500	Binding Head Screw M2×4
3	37014400	E-ring ϕ2
4	37016300	Eject Arm B
6	37016400	Cassette Case B
9	37016600	Roller A
11	37016700	Action Arm A Ass'y
12	37016800	Pinch Roller Spring
14	37016900	Actuater B
15	37017000	Actuater Spring
16	37017100	Plunger Solenoid
17	37017200	PS-type Washer ϕ1.6
18	37017300	Idler Pulley
19	37017400	PS-type Washer ϕ1.3
20	37017500	Return Lever
21	37017600	Eject Arm C Spring
25	37017700	Binding Head Deltite Screw M1.7×6
26	37017800	Leaf Switch
28	37017900	Hook Spring
29	37018000	Azimuth Nut
30	37018100	Pinch Roller Ass'y B
31	37018200	Hook C Spring
32	37018300	Cassette Case A
33	37018400	Pinch Roller Ass'y A
34	00489000	E-ring ϕ2
35	46609800	Binding Head Screw M2×3
36	37018500	Play Back Head Ass'y
38	37018600	Motor Ass'y
39	37018700	Cam Hook A Spring
40	37018800	Cam Hook A
42	37018900	Change Gear B
43	37019000	Change Gear A
44	37019100	Head Plate Spring
45	07938400	Pan Head Screw M2.6×3
46	37019200	Switch
47	07688100	Pan Head SEMS Screw M3×4
48	00420700	Binding Head Screw M2×8
49	37019300	Cam
50	37019400	Plunger Solenoid Spring
51	37021200	Cam Hook C
52	37019500	Binding Head Deltite Screw M2.6×5
53	37019600	Take Up Gear
54	37019700	Reel Ass'y
55	37019800	Back Tention Spring
56	37019900	Cassette Supporter Plate Ass'y
57	37020000	Collar
58	37020100	FR Cam Spring
59	37020200	Flywheel
61	37020300	Roller B
62	37020400	Slider Spring
63	00436900	Pan Head Screw M3×4
65	00446300	Plastic Screw M3×4
66	37021300	Control Circuit Board Ass'y
71	37020500	Action Arm B Ass'y
72	37020600	Cassette Support Spring
74	37020700	Plunger Solenoide
76	37020800	Belt A
77	37020900	Belt B
78	37021000	Gear Plate Ass'y
79	37021100	Friction Ass'y
80	37016500	Slide Switch

10. MAIN PARTS REPLACEMENT

A. Mechanism Ass'y (See Top View on page 18)

1) Take out the top plate and bottom plate from the unit.
2) Make clearance between top portions of front panel and chassis.
3) Remove two screws(S1) (see top view on pange 18) fixing the mechanism ass'y.
4) Take off connector lead ass'y(C1),(C2) and(C3) from circuit board F-4344.
5) Take off connector lead ass'y(C4) from circuit board F-4312.
6) Remove lead wires (Fig. 10-1) from mechanism control circuit board.

Fig. 10-1 Mechanism Control Circuit Board <Conductor Side>


REV SW.
I.S SW.
FF SW.
PRO SW.
SW.COM
From F-4447 Circuit Board

B. Play Head Ass'y㊱, (See Fig. 10-2 and 10-3)

1) Take out the mechanism ass'y from the unit.
2) Push eject arm④.
3) Remove two screws(S2) fixing cassette case A㉜.
4) Take off the cassette case A.
5) Slide head plate ass'y㊲ to remove azimuth nut㉙ and screw㉟.

C. Pinch Roller Ass'y A㉝ or B㉚ (See Fig. 10-2 and 10-3)

1) Remove eject lever spring①.
2) Remove two E-rings③ and roller A⑨.
3) Take off eject lever㉓.
4) Take off return lever⑳.
5) Remove screw(S3) fixing logic control board holder A㉔.
6) Take off the logic control board holder A.
7) Remove screw(S4) fixing side plate A ass'y㉗.
8) Remove E-ring③ fixing eject arm④.
9) Take off the side plate A ass'y and the eject arm.
10) Remove E-ring㉞ fixing pinch roller ass'y A㉝ or B㉚.
11) Take out the pinch roller ass'y A or B.

D. Flywheel(59), Capstan Belt(76) (See Fig. 10-4)

1) Take out the mechanism ass'y from the unit.
2) Remove two screws(S5) fixing flywheel holder(60).
3) Take off the capstan belt.
4) Take out the flywheel(60).

E. Motor Ass'y㊳ (See Fig. 10-4)

1) Take out the mechanism ass'y from the unit.
2) Remove two screws(S6) fixing the motor ass'y㊳.

F. Fader Volume

1) Take out mechanism ass'y.
2) Make clearance between top portions of front panel and chassis.
3) Take off lead wires connector from fader volume circuit board F-4444.
4) Remove the nut fixing fader volume.

G. BASS, TREBLE Volume

1) Take out mechanism ass'y.
2) Make clearance between top portions of front panel and chassis.
3) Remove the nut fixing volume circuit board F-4444.
4) Take off the volume circuit board F-4444.
5) Take off lead wires from BASS, TREBLE, volume circuit board F-4445.
6) Remove the nut fixing BASS, TREBLE volume circuit board F-4445.

Fig. 10-2

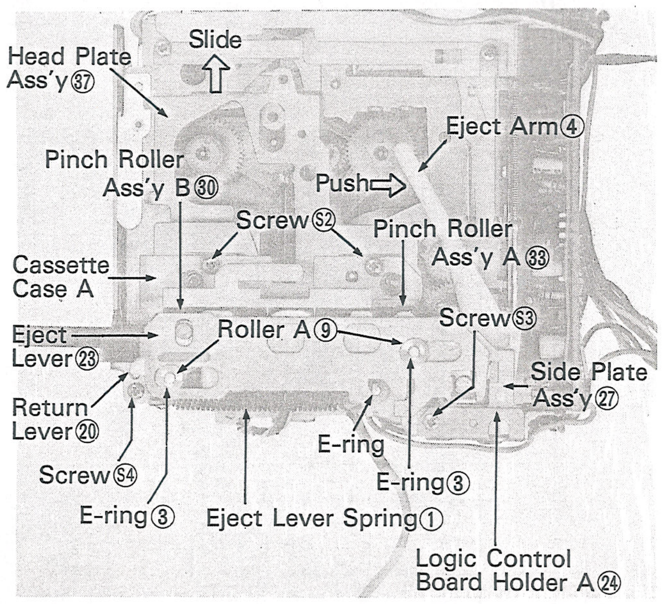

Head Plate Ass'y㊲
Slide
Eject Arm④
Pinch Roller Ass'y B㉚
Push
Screw(S2)
Pinch Roller Ass'y A㉝
Cassette Case A
Screw(S3)
Eject Lever㉓
Roller A⑨
Side Plate Ass'y㉗
Return Lever⑳
E-ring
E-ring③
Screw(S4)
E-ring③
Eject Lever Spring①
Logic Control Board Holder A㉔

Fig. 10-3

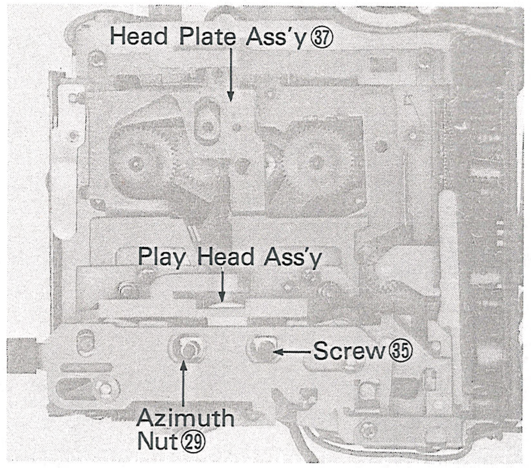
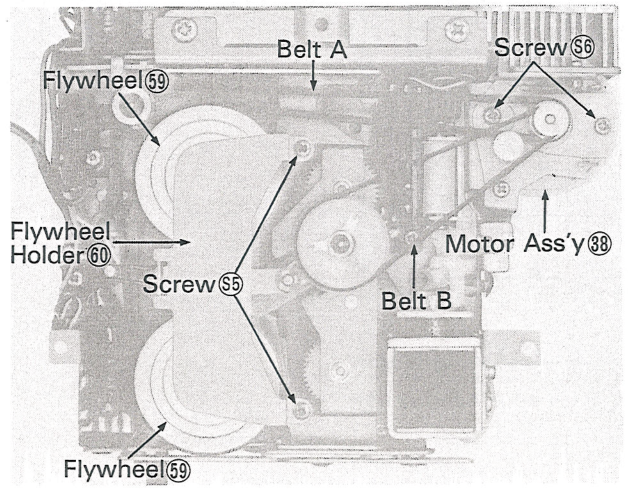

Head Plate Ass'y㊲
Play Head Ass'y
Screw㉟
Azimuth Nut㉙

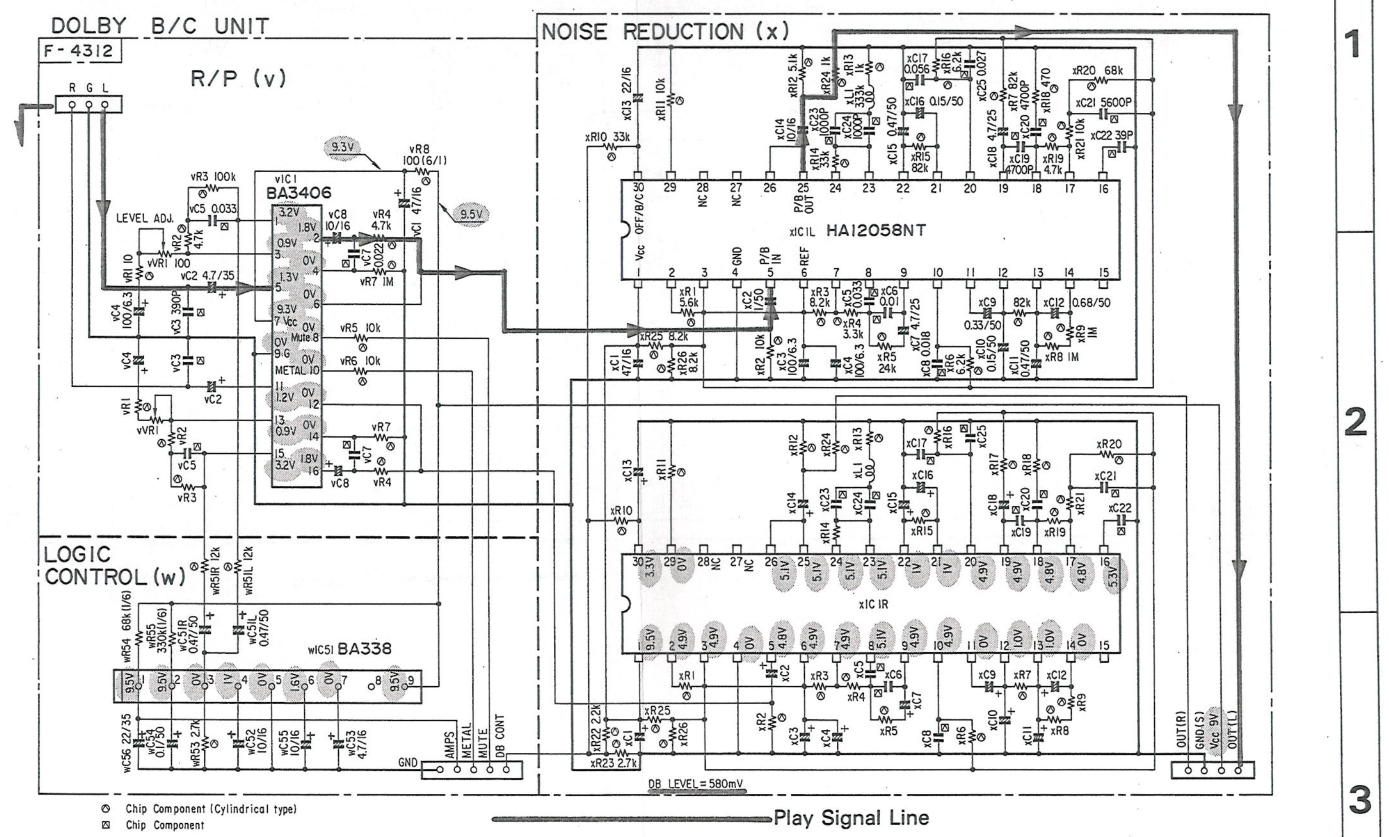
Fig. 10-4


Belt A
Screw(S6)
Flywheel(59)
Flywheel Holder(60)
Motor Ass'y㊳
Screw(S5)
Belt B
Flywheel(59)

11. SCHEMATIC DIAGRAM

11-1. Dolby Noise Reduction Circuit

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.


A
B
C
D
1
2
3
4
5
DOLBY B/C UNIT
F-4312
R G L
R/P (v)
LEVEL ADJ.
vIC1 BA3406
NOISE REDUCTION (x)
xIC1L HA12058NT
xIC1R
LOGIC CONTROL (w)
wIC51 BA338
GND
AMPS
METAL
MUTE
DB CONT
OUT(R)
GND(S)
Vcc 9V
OUT(L)
DB LEVEL=580mV

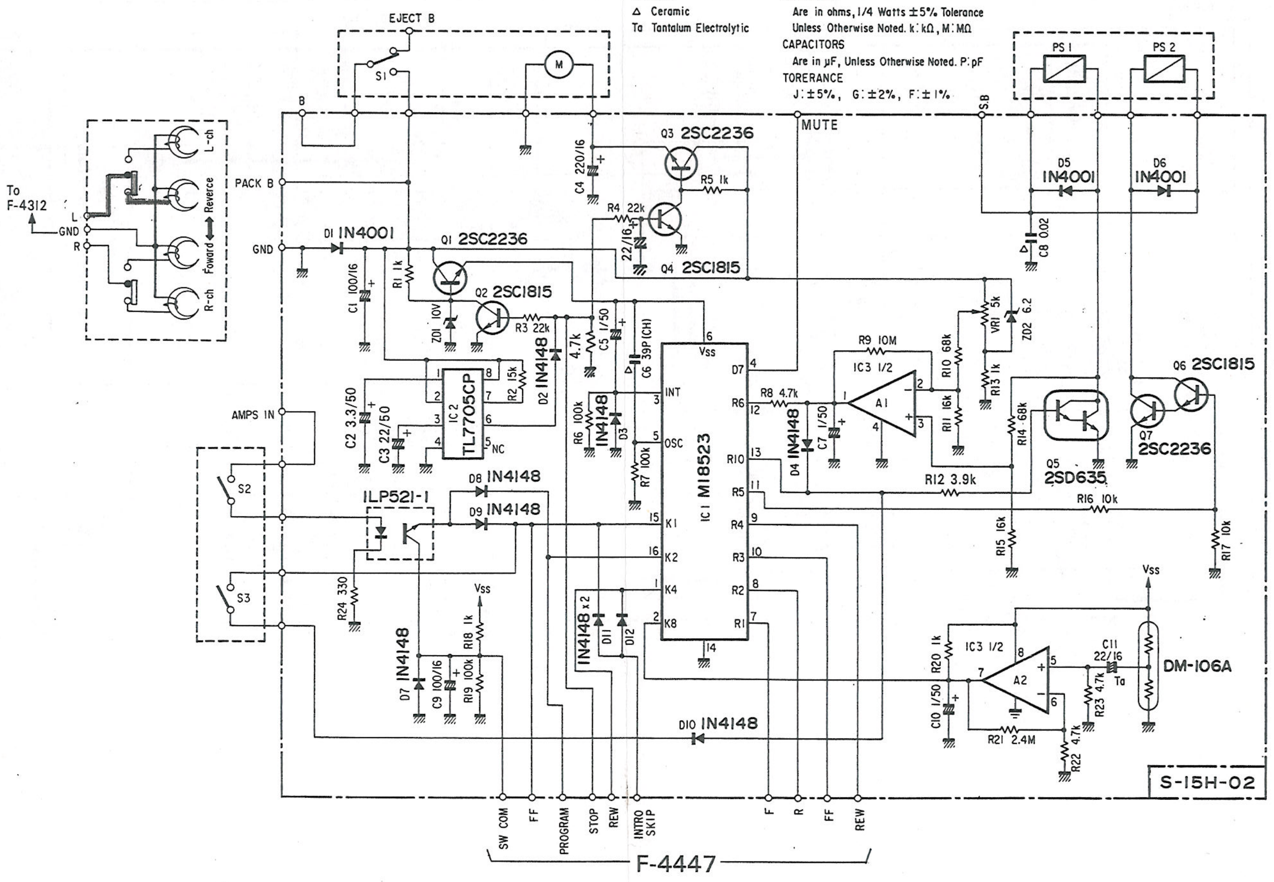
⊘ Chip Component (Cylindrical type)
⊠ Chip Component

Play Signal Line

11-2. Mechanism Control Circuit

SYMBOL
△ Ceramic
Ta Tantalum Electrolytic

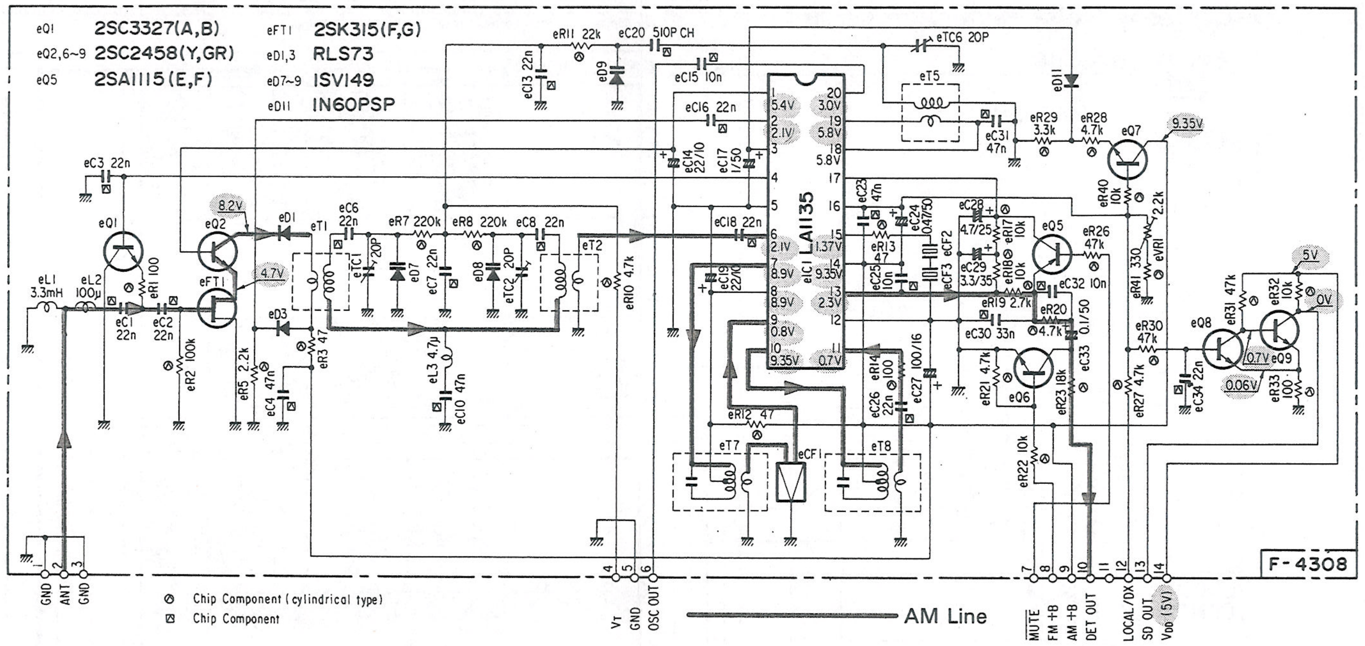
RESISTORS
Are in ohms, 1/4 Watts ±5% Tolerance
Unless Otherwise Noted. k: kΩ, M: MΩ
CAPACITORS
Are in μF, Unless Otherwise Noted. P: pF
TORERANCE
J: ±5%, G: ±2%, F: ±1%


EJECT B
S1
M
To F-4312
L
GND
R
L-ch
Reverce
Foward
R-ch
PACK B
GND
AMPS IN
S2
S3
D1 1N4001
Q1 2SC2236
Q2 2SC1815
Q3 2SC2236
Q4 2SC1815
Q5 2SD635
Q6 2SC1815
Q7 2SC2236
IC2 TL7705CP
IC1 M18523
IC3 1/2
ILP521-1
D5 1N4001
D6 1N4001
PS1
PS2
MUTE
S.B
DM-106A
SW COM
FF
PROGRAM
STOP
REW
INTRO SKIP
F
R
F-4447
S-15H-02

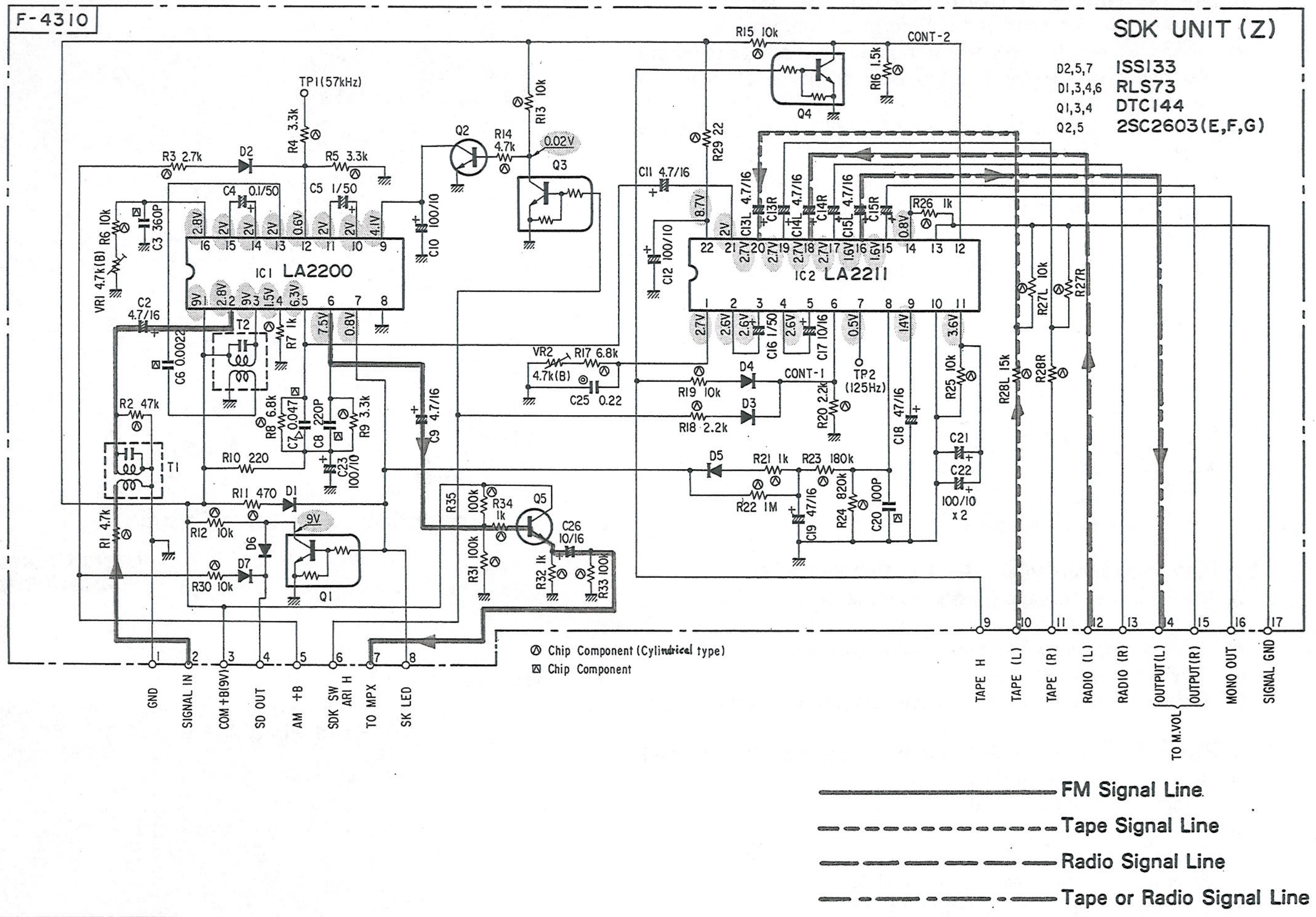
Play Signal Line

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

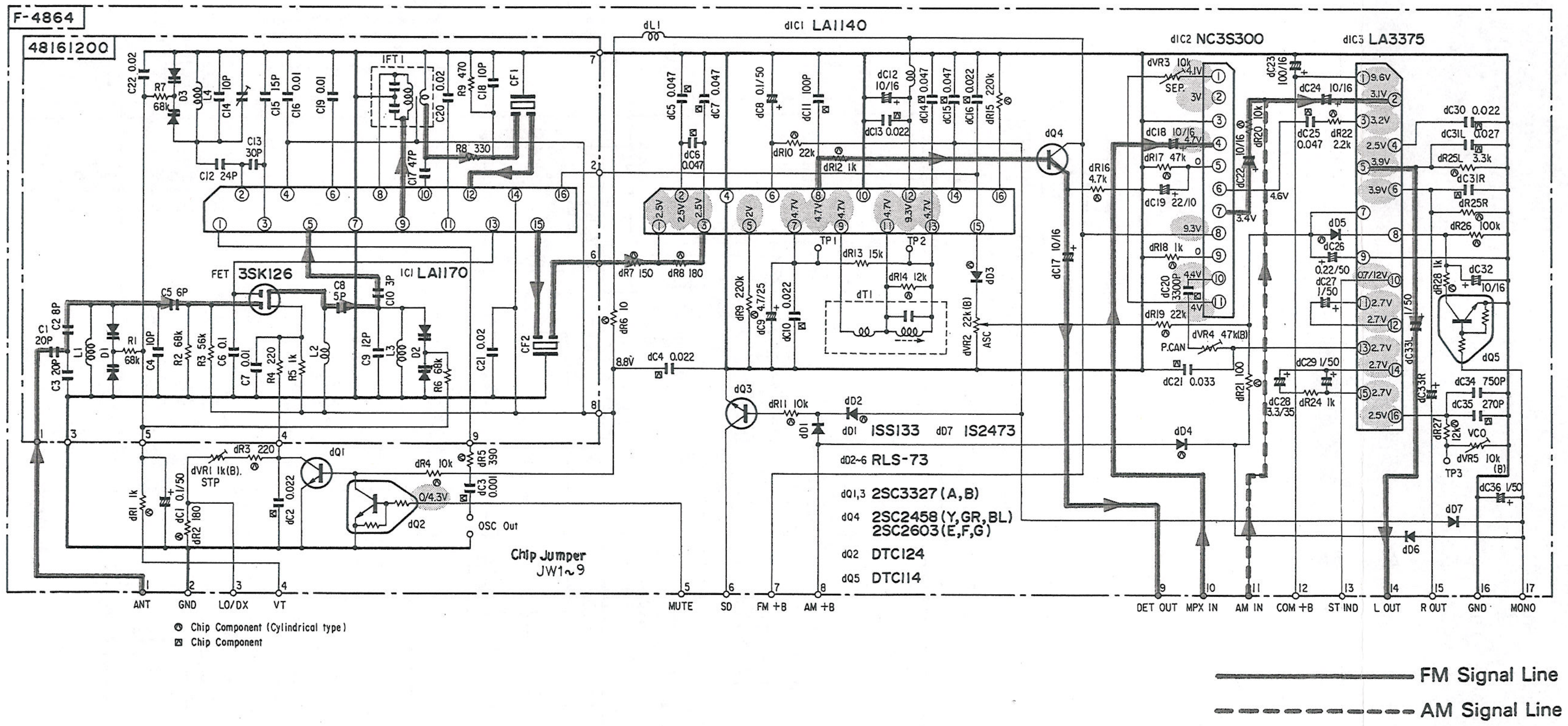
11-3. AM Circuit

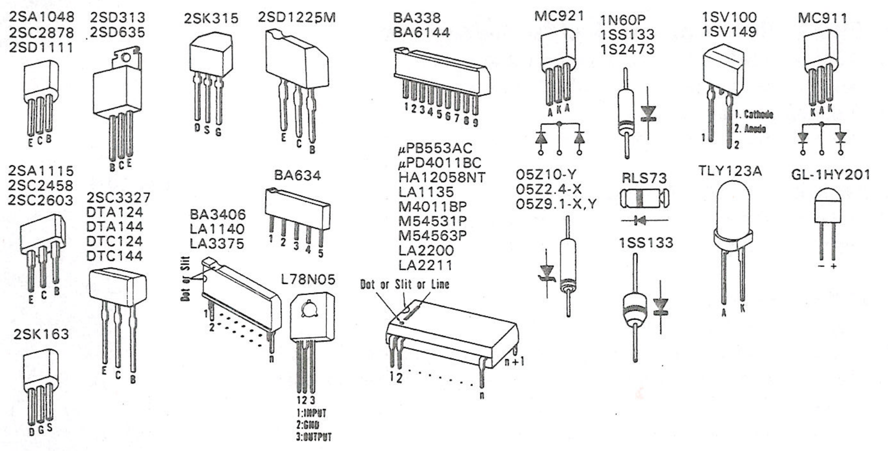

eQ1 2SC3327(A,B)
eQ2,6~9 2SC2458(Y,GR)
eQ5 2SA1115(E,F)
eFT1 2SK315(F,G)
eD1,3 RLS73
eD7~9 1SV149
eD11 1N60PSP
IC1 LA1135
F-4308
GND
ANT
GND
VT
GND
OSC OUT
MUTE
FM +B
AM +B
DET OUT
LOCAL/DX
SD OUT
VDD (5V)
Chip Component (cylindrical type)
Chip Component
AM Line

11-4. Traffic Station Identification


F-4310
SDK UNIT (Z)
D2,5,7 1SS133
D1,3,4,6 RLS73
Q1,3,4 DTC144
Q2,5 2SC2603(E,F,G)
IC1 LA2200
IC2 LA2211
TP1 (57kHz)
TP2 (125Hz)
CONT-1
CONT-2
GND
SIGNAL IN
COM +B (9V)
SD OUT
AM +B
SDK SW ARI H
TO MPX
SK LED
TAPE H
TAPE (L)
TAPE (R)
RADIO (L)
RADIO (R)
OUTPUT (L)
OUTPUT (R)
TO M.VOL
MONO OUT
SIGNAL GND
Chip Component (Cylindrical type)
Chip Component
FM Signal Line
Tape Signal Line
Radio Signal Line
Tape or Radio Signal Line

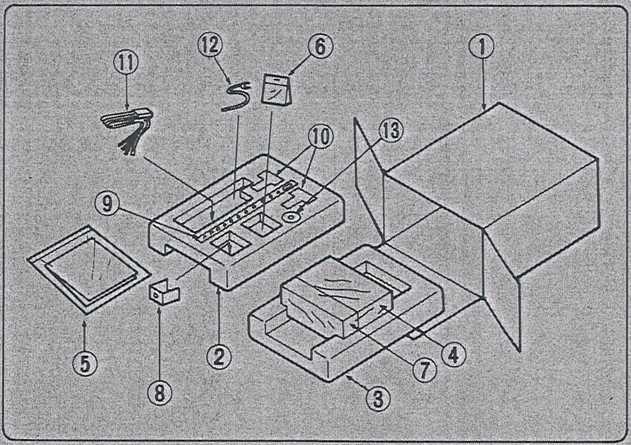
11-5. FM Circuit


F-4864
48161200
dIC1 LA1140
IC1 LA1170
FET 3SK126
dIC2 NC3S300
dIC3 LA3375
dD1 1SS133
dD7 1S2473
dD2~6 RLS-73
dQ1,3 2SC3327(A,B)
dQ4 2SC2458(Y,GR,BL) 2SC2603(E,F,G)
dQ2 DTC124
dQ5 DTC114
Chip Jumper JW1~9
OSC Out
ANT
GND
LO/DX
VT
MUTE
SD
FM +B
AM +B
DET OUT
MPX IN
AM IN
COM +B
ST IND
L OUT
R OUT
GND
MONO
Chip Component (Cylindrical type)
Chip Component
FM Signal Line
AM Signal Line


2SA1048
2SC2878
2SD1111
2SD313
2SD635
2SK315
2SD1225M
BA338
BA6144
MC921
1N60P
1SS133
1S2473
1SV100
1SV149
MC911
2SA1115
2SC2458
2SC2603
2SC3327
DTA124
DTA144
DTC124
DTC144
BA634
BA3406
LA1140
LA3375
μPB553AC
μPD4011BC
HA12058NT
LA1135
M4011BP
M54531P
M54563P
LA2200
LA2211
05Z10-Y
05Z2.4-X
05Z9.1-X,Y
RLS73
1SS133
TLY123A
GL-1HY201
2SK163
L78N05
1: INPUT
2: GND
3: OUTPUT
1. Cathode
2. Anode
Dot or Slit or Line

12. PACKING & PARTS LIST

Parts No.	Stock No.	Description
1	47469900	Carton Case
2	47384010	Styrofoam Packing (1)
3	47384100	Styrofoam Packing (2)
4	47364500	Vinyl Bag
5	46797500	Operating Instruction
6	47483900	Mounting Screw
7	47345400	Housing Case
8	47387600	Rear Braket
9	07900100	Mounting Stay
10	47348700	Lever
11	46865700	Connection Cord Ass'y (2)
12	46898900	Ground Cord
13	47387700	Rubber Bushing



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3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.: Unit 10A, Lyon Industrial Estate, Rockware Avenue, Geenford, Middx UB6, 0AA, England
SANSUI ELECTRONICS G.M.B.H.: Pau Ehrich Strasse 8, 6074 Rödermark 2, West Germany

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